The EGR1 gene expression is activated during this treatment. Thus, by stably transfecting PC12 cells with a construct containing an EGR promoter linked to SEAP reporter, activation of PC12 cells can be assessed.

The EGR/SEAP reporter construct can be assembled by the following protocol. The EGR-1 promoter sequence (-633 to +1)(Sakamoto K et al., Oncogene 6:867-871 (1991)) can be PCR amplified from human genomic DNA using the following primers:

5' GCGCTCGAGGGATGACAGCGATAGAACCCCGG -3' (SEQ ID NO:6)

5' GCGAAGCTTCGCGACTCCCCGGATCCGCCTC-3' (SEQ ID NO:7)

Using the GAS:SEAP/Neo vector produced in Example 12, EGR1 amplified product can then be inserted into this vector. Linearize the GAS:SEAP/Neo vector using restriction enzymes XhoI/HindIII, removing the GAS/SV40 stuffer. Restrict the EGR1 amplified product with these same enzymes. Ligate the vector and the EGR1 promoter.

To prepare 96 well-plates for cell culture, two mls of a coating solution (1:30 dilution of collagen type I (Upstate Biotech Inc. Cat#08-115) in 30% ethanol (filter sterilized)) is added per one 10 cm plate or 50 ml per well of the 96-well plate, and allowed to air dry for 2 hr.

PC12 cells are routinely grown in RPMI-1640 medium (Bio Whittaker) containing 10% horse serum (JRH BIOSCIENCES, Cat. # 12449-78P), 5% heat-inactivated fetal bovine serum (FBS) supplemented with 100 units/ml penicillin and 100 ug/ml streptomycin on a precoated 10 cm tissue culture dish. One to four split is done every three to four days. Cells are removed from the plates by scraping and resuspended with pipetting up and down for more than 15 times.

Transfect the EGR/SEAP/Neo construct into PC12 using the Lipofectamine protocol described in Example 11. EGR-SEAP/PC12 stable cells are obtained by growing the cells in 300 ug/ml G418. The G418-free medium is used for routine growth but every one to two months, the cells should be re-grown in 300 ug/ml G418 for couple of passages.

To assay for neuronal activity, a 10 cm plate with cells around 70 to 80% confluent is screened by removing the old medium. Wash the cells once with PBS

(Phosphate buffered saline). Then starve the cells in low serum medium (RPMI-1640 containing 1% horse serum and 0.5% FBS with antibiotics) overnight.

The next morning, remove the medium and wash the cells with PBS. Scrape off the cells from the plate, suspend the cells well in 2 ml low serum medium. Count the cell number and add more low serum medium to reach final cell density as 5×10^5 cells/ml.

Add 200 ul of the cell suspension to each well of 96-well plate (equivalent to 1×10^5 cells/well). Add 50 ul supernatant produced by Example 11, 37°C for 48 to 72 hr. As a positive control, a growth factor known to activate PC12 cells through EGR can be used, such as 50 ng/ul of Neuronal Growth Factor (NGF). Over fifty-fold induction of SEAP is typically seen in the positive control wells. SEAP assay the supernatant according to Example 17.

Example 16: High-Throughput Screening Assay for T-cell Activity

NF-κB (Nuclear Factor κB) is a transcription factor activated by a wide variety of agents including the inflammatory cytokines IL-1 and TNF, CD30 and CD40, lymphotoxin-alpha and lymphotoxin-beta, by exposure to LPS or thrombin, and by expression of certain viral gene products. As a transcription factor, NF-κB regulates the expression of genes involved in immune cell activation, control of apoptosis (NF- κB appears to shield cells from apoptosis), B and T-cell development, anti-viral and antimicrobial responses, and multiple stress responses.

In non-stimulated conditions, NF- κB is retained in the cytoplasm with I-κB (Inhibitor κB). However, upon stimulation, I- κB is phosphorylated and degraded, causing NF- κB to shuttle to the nucleus, thereby activating transcription of target genes. Target genes activated by NF- κB include IL-2, IL-6, GM-CSF, ICAM-1 and class 1 MHC.

Due to its central role and ability to respond to a range of stimuli, reporter constructs utilizing the NF-κB promoter element are used to screen the supernatants produced in Example 11. Activators or inhibitors of NF-kB would be useful in treating diseases. For example, inhibitors of NF-κB could be used to treat those

diseases related to the acute or chronic activation of NF-kB, such as rheumatoid arthritis.

To construct a vector containing the NF-κB promoter element, a PCR based strategy is employed. The upstream primer contains four tandem copies of the NF-κB binding site (GGGGACTTTCCC) (SEQ ID NO:8), 18 bp of sequence complementary to the 5' end of the SV40 early promoter sequence, and is flanked with an XhoI site:
5':GCGGCCTCGAGGGGACTTTCCCGGGGACTTTCCGGGGACTTTCCGGGAC TTTCCATCCTGCCATCTCAATTAG:3' (SEQ ID NO:9)

The downstream primer is complementary to the 3' end of the SV40 promoter and is flanked with a Hind III site:
5':GCGGCAAGCTTTTTGCAAAGCCTAGGC:3' (SEQ ID NO:4)

PCR amplification is performed using the SV40 promoter template present in the pB-gal:promoter plasmid obtained from Clontech. The resulting PCR fragment is digested with XhoI and Hind III and subcloned into BLSK2-. (Stratagene) Sequencing with the T7 and T3 primers confirms the insert contains the following sequence:

5':CTCGAGGGGACTTTCCCGGGGACTTTCCGGGGACTTTCCGGGACTTTCC ATCTGCCATCTCAATTAGTCAGCAACCATAGTCCCGCCCCTAACTCCGCCC ATCCCGCCCCTAACTCCGCCCAGTTCCGCCCATTCTCCGCCCCATGGCTGA CTAATTTTTTTTATTTATGCAGAGGCCGAGGCCGCCTCGGCCTCTGAGCTA TTCCAGAAGTAGTGAGGAGGCTTTTTTGGAGGCCTAGGCTTTTGCAAAAA GCTT:3' (SEQ ID NO:10)

Next, replace the SV40 minimal promoter element present in the pSEAP2-promoter plasmid (Clontech) with this NF-κB/SV40 fragment using XhoI and HindIII. However, this vector does not contain a neomycin resistance gene, and therefore, is not preferred for mammalian expression systems.

In order to generate stable mammalian cell lines, the NF-κB/SV40/SEAP cassette is removed from the above NF-κB/SEAP vector using restriction enzymes SalI and NotI, and inserted into a vector containing neomycin resistance. Particularly,

the NF-κB/SV40/SEAP cassette was inserted into pGFP-1 (Clontech), replacing the GFP gene, after restricting pGFP-1 with SalI and NotI.

Once NF-κB/SV40/SEAP/Neo vector is created, stable Jurkat T-cells are created and maintained according to the protocol described in Example 13. Similarly, the method for assaying supernatants with these stable Jurkat T-cells is also described in Example 13. As a positive control, exogenous TNF alpha (0.1,1, 10 ng) is added to wells H9, H10, and H11, with a 5-10 fold activation typically observed.

Example 17: Assay for SEAP Activity

As a reporter molecule for the assays described in Examples 13-16, SEAP activity is assayed using the Tropix Phospho-light Kit (Cat. BP-400) according to the following general procedure. The Tropix Phospho-light Kit supplies the Dilution, Assay, and Reaction Buffers used below.

Prime a dispenser with the 2.5x Dilution Buffer and dispense 15 μl of 2.5x dilution buffer into Optiplates containing 35 μl of a supernatant. Seal the plates with a plastic sealer and incubate at 65°C for 30 min. Separate the Optiplates to avoid uneven heating.

Cool the samples to room temperature for 15 minutes. Empty the dispenser and prime with the Assay Buffer. Add 50 μl Assay Buffer and incubate at room temperature 5 min. Empty the dispenser and prime with the Reaction Buffer (see the table below). Add 50 μl Reaction Buffer and incubate at room temperature for 20 minutes. Since the intensity of the chemiluminescent signal is time dependent, and it takes about 10 minutes to read 5 plates on luminometer, one should treat 5 plates at each time and start the second set 10 minutes later.

Read the relative light unit in the luminometer. Set H12 as blank, and print the results. An increase in chemiluminescence indicates reporter activity.

Reaction Buffer Formulation:

# of plates	Rxn buffer diluent (ml)	CSPD (ml)
10	60	3
11	65	3.25
12	70	3.5

13	75	3.75
14	80	4
15	85	4.25
16	90	4.5
17	95	4.75
18	100	5
19	105	5.25
20	110	5.5
21	115	5.75
22	120	6
23	125	6.25
24	130	6.5
25	135	6.75
26	140	7
27	145	7.25
28	150	7.5
29	155	7.75
30	160	8
31	165	8.25
32	170	8.5
33	175	8.75
34	180	9
35	185	9.25
36	190	9.5
37	195	9.75
38	200	10
39	205	10.25
40	210	10.5
41	215	10.75
42	220	11
43	225	11.25
44	230	11.5
45	235	11.75
46	240	12
47	245	12.25
48	250	12.5
49	255	12.75
50	260	13

Example 18: High-Throughput Screening Assay Identifying Changes in Small Molecule Concentration and Membrane Permeability

Binding of a ligand to a receptor is known to alter intracellular levels of small molecules, such as calcium, potassium, sodium, and pH, as well as alter membrane potential. These alterations can be measured in an assay to identify supernatants which bind to receptors of a particular cell. Although the following protocol describes an assay for calcium, this protocol can easily be modified to detect changes in potassium, sodium, pH, membrane potential, or any other small molecule which is detectable by a fluorescent probe.

The following assay uses Fluorometric Imaging Plate Reader ("FLIPR") to measure changes in fluorescent molecules (Molecular Probes) that bind small molecules. Clearly, any fluorescent molecule detecting a small molecule can be used instead of the calcium fluorescent molecule, fluo-4 (Molecular Probes, Inc.; catalog no. F-14202), used here.

For adherent cells, seed the cells at 10,000 -20,000 cells/well in a Co-star black 96-well plate with clear bottom. The plate is incubated in a CO_2 incubator for 20 hours. The adherent cells are washed two times in Biotek washer with 200 ul of HBSS (Hank's Balanced Salt Solution) leaving 100 ul of buffer after the final wash.

A stock solution of 1 mg/ml fluo-4 is made in 10% pluronic acid DMSO. To load the cells with fluo-4 , 50 ul of 12 ug/ml fluo-4 is added to each well. The plate is incubated at 37°C in a CO_2 incubator for 60 min. The plate is washed four times in the Biotek washer with HBSS leaving 100 ul of buffer.

For non-adherent cells, the cells are spun down from culture media. Cells are re-suspended to 2-5x10^6 cells/ml with HBSS in a 50-ml conical tube. 4 ul of 1 mg/ml fluo-4 solution in 10% pluronic acid DMSO is added to each ml of cell suspension. The tube is then placed in a 37°C water bath for 30-60 min. The cells are washed twice with HBSS, resuspended to 1x10^6 cells/ml, and dispensed into a microplate, 100 ul/well. The plate is centrifuged at 1000 rpm for 5 min. The plate is then washed once in Denley CellWash with 200 ul, followed by an aspiration step to 100 ul final volume.

For a non-cell based assay, each well contains a fluorescent molecule, such as fluo-4 . The supernatant is added to the well, and a change in fluorescence is detected.

To measure the fluorescence of intracellular calcium, the FLIPR is set for the following parameters: (1) System gain is 300-800 mW; (2) Exposure time is 0.4 second; (3) Camera F/stop is F/2; (4) Excitation is 488 nm; (5) Emission is 530 nm; and (6) Sample addition is 50 ul. Increased emission at 530 nm indicates an extracellular signaling event which has resulted in an increase in the intracellular Ca^{++} concentration.

Example 19: High-Throughput Screening Assay Identifying Tyrosine Kinase Activity

The Protein Tyrosine Kinases (PTK) represent a diverse group of transmembrane and cytoplasmic kinases. Within the Receptor Protein Tyrosine Kinase RPTK) group are receptors for a range of mitogenic and metabolic growth factors including the PDGF, FGF, EGF, NGF, HGF and Insulin receptor subfamilies. In addition there are a large family of RPTKs for which the corresponding ligand is unknown. Ligands for RPTKs include mainly secreted small proteins, but also membrane-bound and extracellular matrix proteins.

Activation of RPTK by ligands involves ligand-mediated receptor dimerization, resulting in transphosphorylation of the receptor subunits and activation of the cytoplasmic tyrosine kinases. The cytoplasmic tyrosine kinases include receptor associated tyrosine kinases of the src-family (e.g., src, yes, lck, lyn, fyn) and non-receptor linked and cytosolic protein tyrosine kinases, such as the Jak family, members of which mediate signal transduction triggered by the cytokine superfamily of receptors (e.g., the Interleukins, Interferons, GM-CSF, and Leptin).

Because of the wide range of known factors capable of stimulating tyrosine kinase activity, the identification of novel human secreted proteins capable of activating tyrosine kinase signal transduction pathways are of interest. Therefore, the following protocol is designed to identify those novel human secreted proteins capable of activating the tyrosine kinase signal transduction pathways.

Seed target cells (e.g., primary keratinocytes) at a density of approximately 25,000 cells per well in a 96 well Loprodyne Silent Screen Plates purchased from Nalge Nunc (Naperville, IL). The plates are sterilized with two 30 minute rinses with 100% ethanol, rinsed with water and dried overnight. Some plates are coated for 2 hr with 100 ml of cell culture grade type I collagen (50 mg/ml), gelatin (2%) or polylysine (50 mg/ml), all of which can be purchased from Sigma Chemicals (St. Louis, MO) or 10% Matrigel purchased from Becton Dickinson (Bedford,MA), or calf serum, rinsed with PBS and stored at 4^{o}C. Cell growth on these plates is assayed by seeding 5,000 cells/well in growth medium and indirect quantitation of cell number through use of alamarBlue as described by the manufacturer Alamar Biosciences, Inc. (Sacramento, CA) after 48 hr. Falcon plate covers #3071 from Becton Dickinson (Bedford,MA) are used to cover the Loprodyne Silent Screen Plates. Falcon Microtest III cell culture plates can also be used in some proliferation experiments.

To prepare extracts, A431 cells are seeded onto the nylon membranes of Loprodyne plates (20,000/200ml/well) and cultured overnight in complete medium. Cells are quiesced by incubation in serum-free basal medium for 24 hr. After 5-20 minutes treatment with EGF (60ng/ml) or 50 ul of the supernatant produced in Example 11, the medium was removed and 100 ml of extraction buffer ((20 mM HEPES pH 7.5, 0.15 M NaCl, 1% Triton X-100, 0.1% SDS, 2 mM Na3VO4, 2 mM Na4P2O7 and a cocktail of protease inhibitors (# 1836170) obtained from Boeheringer Mannheim (Indianapolis, IN) is added to each well and the plate is shaken on a rotating shaker for 5 minutes at 4^{o}C. The plate is then placed in a vacuum transfer manifold and the extract filtered through the 0.45 mm membrane bottoms of each well using house vacuum. Extracts are collected in a 96-well catch/assay plate in the bottom of the vacuum manifold and immediately placed on ice. To obtain extracts clarified by centrifugation, the content of each well, after detergent solubilization for 5 minutes, is removed and centrifuged for 15 minutes at 4^{o}C at 16,000 x g.

Test the filtered extracts for levels of tyrosine kinase activity. Although many methods of detecting tyrosine kinase activity are known, one method is described here.

Generally, the tyrosine kinase activity of a supernatant is evaluated by determining its ability to phosphorylate a tyrosine residue on a specific substrate (a biotinylated peptide). Biotinylated peptides that can be used for this purpose include PSK1 (corresponding to amino acids 6-20 of the cell division kinase cdc2-p34) and PSK2 (corresponding to amino acids 1-17 of gastrin). Both peptides are substrates for a range of tyrosine kinases and are available from Boehringer Mannheim.

The tyrosine kinase reaction is set up by adding the following components in order. First, add 10ul of 5uM Biotinylated Peptide, then 10ul ATP/Mg_{2+} (5mM ATP/50mM $MgCl_2$), then 10ul of 5x Assay Buffer (40mM imidazole hydrochloride, pH7.3, 40 mM beta-glycerophosphate, 1mM EGTA, 100mM $MgCl_2$, 5 mM $MnCl_2$, 0.5 mg/ml BSA), then 5ul of Sodium Vanadate(1mM), and then 5ul of water. Mix the components gently and preincubate the reaction mix at 30°C for 2 min. Initial the reaction by adding 10ul of the control enzyme or the filtered supernatant.

The tyrosine kinase assay reaction is then terminated by adding 10 ul of 120mm EDTA and place the reactions on ice.

Tyrosine kinase activity is determined by transferring 50 ul aliquot of reaction mixture to a microtiter plate (MTP) module and incubating at 37°C for 20 min. This allows the streptavadin coated 96 well plate to associate with the biotinylated peptide. Wash the MTP module with 300ul/well of PBS four times. Next add 75 ul of anti-phospotyrosine antibody conjugated to horse radish peroxidase(anti-P-Tyr-POD(0.5u/ml)) to each well and incubate at 37°C for one hour. Wash the well as above.

Next add 100ul of peroxidase substrate solution (Boehringer Mannheim) and incubate at room temperature for at least 5 mins (up to 30 min). Measure the absorbance of the sample at 405 nm by using ELISA reader. The level of bound peroxidase activity is quantitated using an ELISA reader and reflects the level of tyrosine kinase activity.

Example 20: High-Throughput Screening Assay Identifying Phosphorylation Activity

As a potential alternative and/or compliment to the assay of protein tyrosine kinase activity described in Example 19, an assay which detects activation (phosphorylation) of major intracellular signal transduction intermediates can also be used. For example, as described below one particular assay can detect tyrosine phosphorylation of the Erk-1 and Erk-2 kinases. However, phosphorylation of other molecules, such as Raf, JNK, p38 MAP, Map kinase kinase (MEK), MEK kinase, Src, Muscle specific kinase (MuSK), IRAK, Tec, and Janus, as well as any other phosphoserine, phosphotyrosine, or phosphothreonine molecule, can be detected by substituting these molecules for Erk-1 or Erk-2 in the following assay.

Specifically, assay plates are made by coating the wells of a 96-well ELISA plate with 0.1ml of protein G (1ug/ml) for 2 hr at room temp, (RT). The plates are then rinsed with PBS and blocked with 3% BSA/PBS for 1 hr at RT. The protein G plates are then treated with 2 commercial monoclonal antibodies (100ng/well) against Erk-1

and Erk-2 (1 hr at RT) (Santa Cruz Biotechnology). (To detect other molecules, this step can easily be modified by substituting a monoclonal antibody detecting any of the above described molecules.) After 3-5 rinses with PBS, the plates are stored at 4°C until use.

A431 cells are seeded at 20,000/well in a 96-well Loprodyne filterplate and cultured overnight in growth medium. The cells are then starved for 48 hr in basal medium (DMEM) and then treated with EGF (6ng/well) or 50 ul of the supernatants obtained in Example 11 for 5-20 minutes. The cells are then solubilized and extracts filtered directly into the assay plate.

After incubation with the extract for 1 hr at RT, the wells are again rinsed. As a positive control, a commercial preparation of MAP kinase (10ng/well) is used in place

of A431 extract. Plates are then treated with a commercial polyclonal (rabbit) antibody (1ug/ml) which specifically recognizes the phosphorylated epitope of the Erk-1 and Erk-2 kinases (1 hr at RT). This antibody is biotinylated by standard procedures. The bound polyclonal antibody is then quantitated by successive

incubations with Europium-streptavidin and Europium fluorescence enhancing reagent in the Wallac DELFIA instrument (time-resolved fluorescence). An increased fluorescent signal over background indicates a phosphorylation.

Example 21: Method of Determining Alterations in a Gene Corresponding to a Polynucleotide

RNA isolated from entire families or individual patients presenting with a phenotype of interest (such as a disease) is be isolated. cDNA is then generated from these RNA samples using protocols known in the art. (See, Sambrook.) The cDNA is then used as a template for PCR, employing primers surrounding regions of interest in SEQ ID NO:X. Suggested PCR conditions consist of 35 cycles at 95°C for 30 seconds; 60-120 seconds at 52-58°C; and 60-120 seconds at 70°C, using buffer solutions described in Sidransky, D., et al., Science 252:706 (1991).

PCR products are then sequenced using primers labeled at their 5' end with T4 polynucleotide kinase, employing SequiTherm Polymerase. (Epicentre Technologies). The intron-exon borders of selected exons is also determined and genomic PCR products analyzed to confirm the results. PCR products harboring suspected mutations is then cloned and sequenced to validate the results of the direct sequencing.

PCR products is cloned into T-tailed vectors as described in Holton, T.A. and Graham, M.W., Nucleic Acids Research, 19:1156 (1991) and sequenced with T7 polymerase (United States Biochemical). Affected individuals are identified by mutations not present in unaffected individuals.

Genomic rearrangements are also observed as a method of determining alterations in a gene corresponding to a polynucleotide. Genomic clones isolated according to Example 2 are nick-translated with digoxigenindeoxy-uridine 5'-triphosphate (Boehringer Manheim), and FISH performed as described in Johnson, Cg. et al., Methods Cell Biol. 35:73-99 (1991). Hybridization with the labeled probe is carried out using a vast excess of human cot-1 DNA for specific hybridization to the corresponding genomic locus.

Chromosomes are counterstained with 4,6-diamino-2-phenylidole and propidium iodide, producing a combination of C- and R-bands. Aligned images for

precise mapping are obtained using a triple-band filter set (Chroma Technology, Brattleboro, VT) in combination with a cooled charge-coupled device camera (Photometrics, Tucson, AZ) and variable excitation wavelength filters. (Johnson, Cv. et al., Genet. Anal. Tech. Appl., 8:75 (1991).) Image collection, analysis and chromosomal fractional length measurements are performed using the ISee Graphical Program System. (Inovision Corporation, Durham, NC.) Chromosome alterations of the genomic region hybridized by the probe are identified as insertions, deletions, and translocations. These alterations are used as a diagnostic marker for an associated disease.

Example 22: Method of Detecting Abnormal Levels of a Polypeptide in a Biological Sample

A polypeptide of the present invention can be detected in a biological sample, and if an increased or decreased level of the polypeptide is detected, this polypeptide is a marker for a particular phenotype. Methods of detection are numerous, and thus, it is understood that one skilled in the art can modify the following assay to fit their particular needs.

For example, antibody-sandwich ELISAs are used to detect polypeptides in a sample, preferably a biological sample. Wells of a microtiter plate are coated with specific antibodies, at a final concentration of 0.2 to 10 ug/ml. The antibodies are either monoclonal or polyclonal and are produced by the method described in Example 10. The wells are blocked so that non-specific binding of the polypeptide to the well is reduced.

The coated wells are then incubated for > 2 hours at RT with a sample containing the polypeptide. Preferably, serial dilutions of the sample should be used to validate results. The plates are then washed three times with deionized or distilled water to remove unbounded polypeptide.

Next, 50 ul of specific antibody-alkaline phosphatase conjugate, at a concentration of 25-400 ng, is added and incubated for 2 hours at room temperature. The plates are again washed three times with deionized or distilled water to remove unbounded conjugate.

Add 75 ul of 4-methylumbelliferyl phosphate (MUP) or p-nitrophenyl phosphate (NPP) substrate solution to each well and incubate 1 hour at room temperature. Measure the reaction by a microtiter plate reader. Prepare a standard curve, using serial dilutions of a control sample, and plot polypeptide concentration on the X-axis (log scale) and fluorescence or absorbance of the Y-axis (linear scale). Interpolate the concentration of the polypeptide in the sample using the standard curve.

Example 23: Formulating a Polypeptide

The secreted polypeptide composition will be formulated and dosed in a fashion consistent with good medical practice, taking into account the clinical condition of the individual patient (especially the side effects of treatment with the secreted polypeptide alone), the site of delivery, the method of administration, the scheduling of administration, and other factors known to practitioners. The "effective amount" for purposes herein is thus determined by such considerations.

As a general proposition, the total pharmaceutically effective amount of secreted polypeptide administered parenterally per dose will be in the range of about 1 µg/kg/day to 10 mg/kg/day of patient body weight, although, as noted above, this will be subject to therapeutic discretion. More preferably, this dose is at least 0.01 mg/kg/day, and most preferably for humans between about 0.01 and 1 mg/kg/day for the hormone. If given continuously, the secreted polypeptide is typically administered at a dose rate of about 1 µg/kg/hour to about 50 µg/kg/hour, either by 1-4 injections per day or by continuous subcutaneous infusions, for example, using a mini-pump. An intravenous bag solution may also be employed. The length of treatment needed to observe changes and the interval following treatment for responses to occur appears to vary depending on the desired effect.

Pharmaceutical compositions containing the secreted protein of the invention are administered orally, rectally, parenterally, intracistemally, intravaginally, intraperitoneally, topically (as by powders, ointments, gels, drops or transdermal patch), bucally, or as an oral or nasal spray. "Pharmaceutically acceptable carrier" refers to a non-toxic solid, semisolid or liquid filler, diluent, encapsulating material or formulation auxiliary of any type. The term "parenteral" as used herein refers to

modes of administration which include intravenous, intramuscular, intraperitoneal, intrasternal, subcutaneous and intraarticular injection and infusion.

The secreted polypeptide is also suitably administered by sustained-release systems. Suitable examples of sustained-release compositions include semi-permeable polymer matrices in the form of shaped articles, e.g., films, or mirocapsules. Sustained-release matrices include polylactides (U.S. Pat. No. 3,773,919, EP 58,481), copolymers of L-glutamic acid and gamma-ethyl-L-glutamate (Sidman, U. et al., Biopolymers 22:547-556 (1983)), poly (2- hydroxyethyl methacrylate) (R. Langer et al., J. Biomed. Mater. Res. 15:167-277 (1981), and R. Langer, Chem. Tech. 12:98-105 (1982)), ethylene vinyl acetate (R. Langer et al.) or poly-D- (-)-3-hydroxybutyric acid (EP 133,988). Sustained-release compositions also include liposomally entrapped polypeptides. Liposomes containing the secreted polypeptide are prepared by methods known per se: DE 3,218,121; Epstein et al., Proc. Natl. Acad. Sci. USA 82:3688-3692 (1985); Hwang et al., Proc. Natl. Acad. Sci. USA 77:4030-4034 (1980); EP 52,322; EP 36,676; EP 88,046; EP 143,949; EP 142,641; Japanese Pat. Appl. 83-118008; U.S. Pat. Nos. 4,485,045 and 4,544,545; and EP 102,324. Ordinarily, the liposomes are of the small (about 200-800 Angstroms) unilamellar type in which the lipid content is greater than about 30 mol. percent cholesterol, the selected proportion being adjusted for the optimal secreted polypeptide therapy.

For parenteral administration, in one embodiment, the secreted polypeptide is formulated generally by mixing it at the desired degree of purity, in a unit dosage injectable form (solution, suspension, or emulsion), with a pharmaceutically acceptable carrier, i.e., one that is non-toxic to recipients at the dosages and concentrations employed and is compatible with other ingredients of the formulation. For example, the formulation preferably does not include oxidizing agents and other compounds that are known to be deleterious to polypeptides.

Generally, the formulations are prepared by contacting the polypeptide uniformly and intimately with liquid carriers or finely divided solid carriers or both. Then, if necessary, the product is shaped into the desired formulation. Preferably the carrier is a parenteral carrier, more preferably a solution that is isotonic with the blood of the recipient. Examples of such carrier vehicles include water, saline, Ringer's

solution, and dextrose solution. Non-aqueous vehicles such as fixed oils and ethyl oleate are also useful herein, as well as liposomes.

The carrier suitably contains minor amounts of additives such as substances that enhance isotonicity and chemical stability. Such materials are non-toxic to recipients at the dosages and concentrations employed, and include buffers such as phosphate, citrate, succinate, acetic acid, and other organic acids or their salts; antioxidants such as ascorbic acid; low molecular weight (less than about ten residues) polypeptides, e.g., polyarginine or tripeptides; proteins, such as serum albumin, gelatin, or immunoglobulins; hydrophilic polymers such as polyvinylpyrrolidone; amino acids, such as glycine, glutamic acid, aspartic acid, or arginine; monosaccharides, disaccharides, and other carbohydrates including cellulose or its derivatives, glucose, manose, or dextrins; chelating agents such as EDTA; sugar alcohols such as mannitol or sorbitol; counterions such as sodium; and/or nonionic surfactants such as polysorbates, poloxamers, or PEG.

The secreted polypeptide is typically formulated in such vehicles at a concentration of about 0.1 mg/ml to 100 mg/ml, preferably 1-10 mg/ml, at a pH of about 3 to 8. It will be understood that the use of certain of the foregoing excipients, carriers, or stabilizers will result in the formation of polypeptide salts.

Any polypeptide to be used for therapeutic administration can be sterile. Sterility is readily accomplished by filtration through sterile filtration membranes (e.g., 0.2 micron membranes). Therapeutic polypeptide compositions generally are placed into a container having a sterile access port, for example, an intravenous solution bag or vial having a stopper pierceable by a hypodermic injection needle.

Polypeptides ordinarily will be stored in unit or multi-dose containers, for example, sealed ampoules or vials, as an aqueous solution or as a lyophilized formulation for reconstitution. As an example of a lyophilized formulation, 10-ml vials are filled with 5 ml of sterile-filtered 1% (w/v) aqueous polypeptide solution, and the resulting mixture is lyophilized. The infusion solution is prepared by reconstituting the lyophilized polypeptide using bacteriostatic Water-for-Injection.

The invention also provides a pharmaceutical pack or kit comprising one or more containers filled with one or more of the ingredients of the pharmaceutical compositions of the invention. Associated with such container(s) can be a notice in

the form prescribed by a governmental agency regulating the manufacture, use or sale of pharmaceuticals or biological products, which notice reflects approval by the agency of manufacture, use or sale for human administration. In addition, the polypeptides of the present invention may be employed in conjunction with other therapeutic compounds.

Example 24: Method of Treating Decreased Levels of the Polypeptide

It will be appreciated that conditions caused by a decrease in the standard or normal expression level of a secreted protein in an individual can be treated by administering the polypeptide of the present invention, preferably in the secreted form. Thus, the invention also provides a method of treatment of an individual in need of an increased level of the polypeptide comprising administering to such an individual a pharmaceutical composition comprising an amount of the polypeptide to increase the activity level of the polypeptide in such an individual.

For example, a patient with decreased levels of a polypeptide receives a daily dose 0.1-100 ug/kg of the polypeptide for six consecutive days. Preferably, the polypeptide is in the secreted form. The exact details of the dosing scheme, based on administration and formulation, are provided in Example 23.

Example 25: Method of Treating Increased Levels of the Polypeptide

Antisense technology is used to inhibit production of a polypeptide of the present invention. This technology is one example of a method of decreasing levels of a polypeptide, preferably a secreted form, due to a variety of etiologies, such as cancer.

For example, a patient diagnosed with abnormally increased levels of a polypeptide is administered intravenously antisense polynucleotides at 0.5, 1.0, 1.5, 2.0 and 3.0 mg/kg day for 21 days. This treatment is repeated after a 7-day rest period if the treatment was well tolerated. The formulation of the antisense polynucleotide is provided in Example 23.

Example 26: Method of Treatment Using Gene Therapy

One method of gene therapy transplants fibroblasts, which are capable of expressing a polypeptide, onto a patient. Generally, fibroblasts are obtained from a subject by skin biopsy. The resulting tissue is placed in tissue-culture medium and separated into small pieces. Small chunks of the tissue are placed on a wet surface of a tissue culture flask, approximately ten pieces are placed in each flask. The flask is turned upside down, closed tight and left at room temperature over night. After 24 hours at room temperature, the flask is inverted and the chunks of tissue remain fixed to the bottom of the flask and fresh media (e.g., Ham's F12 media, with 10% FBS, penicillin and streptomycin) is added. The flasks are then incubated at 37°C for approximately one week.

At this time, fresh media is added and subsequently changed every several days. After an additional two weeks in culture, a monolayer of fibroblasts emerge. The monolayer is trypsinized and scaled into larger flasks.

pMV-7 (Kirschmeier, P.T. et al., DNA, 7:219-25 (1988)), flanked by the long terminal repeats of the Moloney murine sarcoma virus, is digested with EcoRI and HindIII and subsequently treated with calf intestinal phosphatase. The linear vector is fractionated on agarose gel and purified, using glass beads.

The cDNA encoding a polypeptide of the present invention can be amplified using PCR primers which correspond to the 5' and 3' end sequences respectively as set forth in Example 1. Preferably, the 5' primer contains an EcoRI site and the 3' primer includes a HindIII site. Equal quantities of the Moloney murine sarcoma virus linear backbone and the amplified EcoRI and HindIII fragment are added together, in the presence of T4 DNA ligase. The resulting mixture is maintained under conditions appropriate for ligation of the two fragments. The ligation mixture is then used to transform bacteria HB101, which are then plated onto agar containing kanamycin for the purpose of confirming that the vector has the gene of interest properly inserted.

The amphotropic pA317 or GP+am12 packaging cells are grown in tissue culture to confluent density in Dulbecco's Modified Eagles Medium (DMEM) with 10% calf serum (CS), penicillin and streptomycin. The MSV vector containing the gene is then added to the media and the packaging cells transduced with the vector. The packaging cells now produce infectious viral particles containing the gene (the packaging cells are now referred to as producer cells).

Fresh media is added to the transduced producer cells, and subsequently, the media is harvested from a 10 cm plate of confluent producer cells. The spent media, containing the infectious viral particles, is filtered through a millipore filter to remove detached producer cells and this media is then used to infect fibroblast cells. Media is removed from a sub-confluent plate of fibroblasts and quickly replaced with the media from the producer cells. This media is removed and replaced with fresh media. If the titer of virus is high, then virtually all fibroblasts will be infected and no selection is required. If the titer is very low, then it is necessary to use a retroviral vector that has a selectable marker, such as neo or his. Once the fibroblasts have been efficiently infected, the fibroblasts are analyzed to determine whether protein is produced.

The engineered fibroblasts are then transplanted onto the host, either alone or after having been grown to confluence on cytodex 3 microcarrier beads.

Example 27: Method of Treatment Using Gene Therapy - In Vivo

Another aspect of the present invention is using *in vivo* gene therapy methods to treat disorders, diseases and conditions. The gene therapy method relates to the introduction of naked nucleic acid (DNA, RNA, and antisense DNA or RNA) sequences into an animal to increase or decrease the expression of the polypeptide. The polynucleotide of the present invention may be operatively linked to a promoter or any other genetic elements necessary for the expression of the polypeptide by the target tissue. Such gene therapy and delivery techniques and methods are known in the art, see, for example, WO90/11092, WO98/11779; U.S. Patent NO. 5693622, 5705151, 5580859; Tabata H. et al. (1997) Cardiovasc. Res. 35(3):470-479, Chao J et al. (1997) Pharmacol. Res. 35(6):517-522, Wolff J.A. (1997) Neuromuscul. Disord. 7(5):314-318, Schwartz B. et al. (1996) Gene Ther. 3(5):405-411, Tsurumi Y. et al. (1996) Circulation 94(12):3281-3290 (incorporated herein by reference).

The polynucleotide constructs may be delivered by any method that delivers injectable materials to the cells of an animal, such as, injection into the interstitial space of tissues (heart, muscle, skin, lung, liver, intestine and the like). The

polynucleotide constructs can be delivered in a pharmaceutically acceptable liquid or aqueous carrier.

The term "naked" polynucleotide, DNA or RNA, refers to sequences that are free from any delivery vehicle that acts to assist, promote, or facilitate entry into the cell, including viral sequences, viral particles, liposome formulations, lipofectin or precipitating agents and the like. However, the polynucleotides of the present invention may also be delivered in liposome formulations (such as those taught in Felgner P.L. et al. (1995) Ann. NY Acad. Sci. 772:126-139 and Abdallah B. et al. (1995) Biol. Cell 85(1):1-7) which can be prepared by methods well known to those skilled in the art.

The polynucleotide vector constructs used in the gene therapy method are preferably constructs that will not integrate into the host genome nor will they contain sequences that allow for replication. Any strong promoter known to those skilled in the art can be used for driving the expression of DNA. Unlike other gene therapies techniques, one major advantage of introducing naked nucleic acid sequences into target cells is the transitory nature of the polynucleotide synthesis in the cells. Studies have shown that non-replicating DNA sequences can be introduced into cells to provide production of the desired polypeptide for periods of up to six months.

The polynucleotide construct can be delivered to the interstitial space of tissues within the an animal, including of muscle, skin, brain, lung, liver, spleen, bone marrow, thymus, heart, lymph, blood, bone, cartilage, pancreas, kidney, gall bladder, stomach, intestine, testis, ovary, uterus, rectum, nervous system, eye, gland, and connective tissue. Interstitial space of the tissues comprises the intercellular fluid, mucopolysaccharide matrix among the reticular fibers of organ tissues, elastic fibers in the walls of vessels or chambers, collagen fibers of fibrous tissues, or that same matrix within connective tissue ensheathing muscle cells or in the lacunae of bone. It is similarly the space occupied by the plasma of the circulation and the lymph fluid of the lymphatic channels. Delivery to the interstitial space of muscle tissue is preferred for the reasons discussed below. They may be conveniently delivered by injection into the tissues comprising these cells. They are preferably delivered to and expressed in persistent, non-dividing cells which are differentiated, although delivery and expression may be achieved in non-differentiated or less completely

differentiated cells, such as, for example, stem cells of blood or skin fibroblasts. *In vivo* muscle cells are particularly competent in their ability to take up and express polynucleotides.

For the naked polynucleotide injection, an effective dosage amount of DNA or RNA will be in the range of from about 0.05 g/kg body weight to about 50 mg/kg body weight. Preferably the dosage will be from about 0.005 mg/kg to about 20 mg/kg and more preferably from about 0.05 mg/kg to about 5 mg/kg. Of course, as the artisan of ordinary skill will appreciate, this dosage will vary according to the tissue site of injection. The appropriate and effective dosage of nucleic acid sequence can readily be determined by those of ordinary skill in the art and may depend on the condition being treated and the route of administration. The preferred route of administration is by the parenteral route of injection into the interstitial space of tissues. However, other parenteral routes may also be used, such as, inhalation of an aerosol formulation particularly for delivery to lungs or bronchial tissues, throat or mucous membranes of the nose. In addition, naked polynucleotide constructs can be delivered to arteries during angioplasty by the catheter used in the procedure.

The dose response effects of injected polynucleotide in muscle *in vivo* is determined as follows. Suitable template DNA for production of mRNA coding for polypeptide of the present invention is prepared in accordance with a standard recombinant DNA methodology. The template DNA, which may be either circular or linear, is either used as naked DNA or complexed with liposomes. The quadriceps muscles of mice are then injected with various amounts of the template DNA.

Five to six week old female and male Balb/C mice are anesthetized by intraperitoneal injection with 0.3 ml of 2.5% Avertin. A 1.5 cm incision is made on the anterior thigh, and the quadriceps muscle is directly visualized. The template DNA is injected in 0.1 ml of carrier in a 1 cc syringe through a 27 gauge needle over one minute, approximately 0.5 cm from the distal insertion site of the muscle into the knee and about 0.2 cm deep. A suture is placed over the injection site for future localization, and the skin is closed with stainless steel clips.

After an appropriate incubation time (e.g., 7 days) muscle extracts are prepared by excising the entire quadriceps. Every fifth 15 um cross-section of the individual quadriceps muscles is histochemically stained for protein expression. A

time course for protein expression may be done in a similar fashion except that quadriceps from different mice are harvested at different times. Persistence of DNA in muscle following injection may be determined by Southern blot analysis after preparing total cellular DNA and HIRT supernatants from injected and control mice. The results of the above experimentation in mice can be use to extrapolate proper dosages and other treatment parameters in humans and other animals using naked DNA.

Example 28: Transgenic Animals.

The polypeptides of the invention can also be expressed in transgenic animals. Animals of any species, including, but not limited to, mice, rats, rabbits, hamsters, guinea pigs, pigs, micro-pigs, goats, sheep, cows and non-human primates, *e.g.*, baboons, monkeys, and chimpanzees may be used to generate transgenic animals. In a specific embodiment, techniques described herein or otherwise known in the art, are used to express polypeptides of the invention in humans, as part of a gene therapy protocol.

Any technique known in the art may be used to introduce the transgene (i.e., polynucleotides of the invention) into animals to produce the founder lines of transgenic animals. Such techniques include, but are not limited to, pronuclear microinjection (Paterson et al., Appl. Microbiol. Biotechnol. 40:691-698 (1994); Carver et al., Biotechnology (NY) 11:1263-1270 (1993); Wright et al., Biotechnology (NY) 9:830-834 (1991); and Hoppe et al., U.S. Pat. No. 4,873,191 (1989)); retrovirus mediated gene transfer into germ lines (Van der Putten et al., Proc. Natl. Acad. Sci., USA 82:6148-6152 (1985)), blastocysts or embryos; gene targeting in embryonic stem cells (Thompson et al., Cell 56:313-321 (1989)); electroporation of cells or embryos (Lo, 1983, Mol Cell. Biol. 3:1803-1814 (1983)); introduction of the polynucleotides of the invention using a gene gun (see, e.g., Ulmer et al., Science 259:1745 (1993); introducing nucleic acid constructs into embryonic pleuripotent stem cells and transferring the stem cells back into the blastocyst; and sperm-mediated gene transfer (Lavitrano et al., Cell 57:717-723 (1989); etc. For a review of such techniques, see Gordon, "Transgenic Animals," Intl. Rev. Cytol. 115:171-229 (1989), which is incorporated by reference herein in its entirety.

Any technique known in the art may be used to produce transgenic clones containing polynucleotides of the invention, for example, nuclear transfer into enucleated oocytes of nuclei from cultured embryonic, fetal, or adult cells induced to quiescence (Campell et al., Nature 380:64-66 (1996); Wilmut et al., Nature 385:810-813 (1997)).

The present invention provides for transgenic animals that carry the transgene in all their cells, as well as animals which carry the transgene in some, but not all their cells, *i.e.*, mosaic animals or chimeric. The transgene may be integrated as a single transgene or as multiple copies such as in concatamers, *e.g.*, head-to-head tandems or head-to-tail tandems. The transgene may also be selectively introduced into and activated in a particular cell type by following, for example, the teaching of Lasko et al. (Lasko et al., Proc. Natl. Acad. Sci. USA 89:6232-6236 (1992)). The regulatory sequences required for such a cell-type specific activation will depend upon the particular cell type of interest, and will be apparent to those of skill in the art. When it is desired that the polynucleotide transgene be integrated into the chromosomal site of the endogenous gene, gene targeting is preferred. Briefly, when such a technique is to be utilized, vectors containing some nucleotide sequences homologous to the endogenous gene are designed for the purpose of integrating, via homologous recombination with chromosomal sequences, into and disrupting the function of the nucleotide sequence of the endogenous gene. The transgene may also be selectively introduced into a particular cell type, thus inactivating the endogenous gene in only that cell type, by following, for example, the teaching of Gu et al. (Gu et al., Science 265:103-106 (1994)). The regulatory sequences required for such a cell-type specific inactivation will depend upon the particular cell type of interest, and will be apparent to those of skill in the art.

Once transgenic animals have been generated, the expression of the recombinant gene may be assayed utilizing standard techniques. Initial screening may be accomplished by Southern blot analysis or PCR techniques to analyze animal tissues to verify that integration of the transgene has taken place. The level of mRNA expression of the transgene in the tissues of the transgenic animals may also be assessed using techniques which include, but are not limited to, Northern blot analysis of tissue samples obtained from the animal, *in situ* hybridization analysis, and reverse

transcriptase-PCR (rt-PCR). Samples of transgenic gene-expressing tissue may also be evaluated immunocytochemically or immunohistochemically using antibodies specific for the transgene product.

Once the founder animals are produced, they may be bred, inbred, outbred, or crossbred to produce colonies of the particular animal. Examples of such breeding strategies include, but are not limited to: outbreeding of founder animals with more than one integration site in order to establish separate lines; inbreeding of separate lines in order to produce compound transgenics that express the transgene at higher levels because of the effects of additive expression of each transgene; crossing of heterozygous transgenic animals to produce animals homozygous for a given integration site in order to both augment expression and eliminate the need for screening of animals by DNA analysis; crossing of separate homozygous lines to produce compound heterozygous or homozygous lines; and breeding to place the transgene on a distinct background that is appropriate for an experimental model of interest.

Transgenic animals of the invention have uses which include, but are not limited to, animal model systems useful in elaborating the biological function of polypeptides of the present invention, studying conditions and/or disorders associated with aberrant expression, and in screening for compounds effective in ameliorating such conditions and/or disorders.

Example 29: Knock-Out Animals.

Endogenous gene expression can also be reduced by inactivating or "knocking out" the gene and/or its promoter using targeted homologous recombination. (*E.g.*, see Smithies et al., Nature 317:230-234 (1985); Thomas & Capecchi, Cell 51:503-512 (1987); Thompson et al., Cell 5:313-321 (1989); each of which is incorporated by reference herein in its entirety). For example, a mutant, non-functional polynucleotide of the invention (or a completely unrelated DNA sequence) flanked by DNA homologous to the endogenous polynucleotide sequence (either the coding regions or regulatory regions of the gene) can be used, with or without a selectable marker and/or a negative selectable marker, to transfect cells that express polypeptides of the invention *in vivo*. In another embodiment, techniques known in

the art are used to generate knockouts in cells that contain, but do not express the gene of interest. Insertion of the DNA construct, via targeted homologous recombination, results in inactivation of the targeted gene. Such approaches are particularly suited in research and agricultural fields where modifications to embryonic stem cells can be used to generate animal offspring with an inactive targeted gene (*e.g.*, see Thomas & Capecchi 1987 and Thompson 1989, *supra*). However this approach can be routinely adapted for use in humans provided the recombinant DNA constructs are directly administered or targeted to the required site *in vivo* using appropriate viral vectors that will be apparent to those of skill in the art.

In further embodiments of the invention, cells that are genetically engineered to express the polypeptides of the invention, or alternatively, that are genetically engineered not to express the polypeptides of the invention (e.g., knockouts) are administered to a patient *in vivo*. Such cells may be obtained from the patient (i.e., animal, including human) or an MHC compatible donor and can include, but are not limited to fibroblasts, bone marrow cells, blood cells (e.g., lymphocytes), adipocytes, muscle cells, endothelial cells etc. The cells are genetically engineered *in vitro* using recombinant DNA techniques to introduce the coding sequence of polypeptides of the invention into the cells, or alternatively, to disrupt the coding sequence and/or endogenous regulatory sequence associated with the polypeptides of the invention, e.g., by transduction (using viral vectors, and preferably vectors that integrate the transgene into the cell genome) or transfection procedures, including, but not limited to, the use of plasmids, cosmids, YACs, naked DNA, electroporation, liposomes, etc. The coding sequence of the polypeptides of the invention can be placed under the control of a strong constitutive or inducible promoter or promoter/enhancer to achieve expression, and preferably secretion, of the polypeptides of the invention. The engineered cells which express and preferably secrete the polypeptides of the invention can be introduced into the patient systemically, e.g., in the circulation, or intraperitoneally.

Alternatively, the cells can be incorporated into a matrix and implanted in the body, e.g., genetically engineered fibroblasts can be implanted as part of a skin graft; genetically engineered endothelial cells can be implanted as part of a lymphatic or vascular graft. (See, for example, Anderson et al. U.S. Patent No. 5,399,349; and

Mulligan & Wilson, U.S. Patent No. 5,460,959 each of which is incorporated by reference herein in its entirety).

When the cells to be administered are non-autologous or non-MHC compatible cells, they can be administered using well known techniques which prevent the development of a host immune response against the introduced cells. For example, the cells may be introduced in an encapsulated form which, while allowing for an exchange of components with the immediate extracellular environment, does not allow the introduced cells to be recognized by the host immune system.

Transgenic and "knock-out" animals of the invention have uses which include, but are not limited to, animal model systems useful in elaborating the biological function of polypeptides of the present invention, studying conditions and/or disorders associated with aberrant expression, and in screening for compounds effective in ameliorating such conditions and/or disorders.

It will be clear that the invention may be practiced otherwise than as particularly described in the foregoing description and examples. Numerous modifications and variations of the present invention are possible in light of the above teachings and, therefore, are within the scope of the appended claims.

The entire disclosure of each document cited (including patents, patent applications, journal articles, abstracts, laboratory manuals, books, or other disclosures) in the Background of the Invention, Detailed Description, and Examples is hereby incorporated herein by reference. Further, the hard copy of the sequence listing submitted herewith and the corresponding computer readable form are both incorporated herein by reference in their entireties.

Applicant's or agent's file reference number	PZ031PCT	International application No.	Unassigned

INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13*bis*)

A. The indications made below relate to the microorganism referred to in the description on page 259, line N/A

B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet ☐

Name of depositary institution American Type Culture Collection

Address of depositary institution *(including postal code and country)*

10801 University Boulevard
Manassas, Virginia 20110-2209
United States of America

Date of deposit	Accession Number
July 27, 1998	203070

C. ADDITIONAL INDICATIONS *(leave blank if not applicable)* This information is continued on an additional sheet ☐

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A. The indications made below relate to the microorganism referred to in the description on page 249, line N/A

B. IDENTIFICATION OF DEPOSIT — Further deposits are identified on an additional sheet ☐

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United States of America

Date of deposit	Accession Number
June 26, 1998	203027

C. ADDITIONAL INDICATIONS *(leave blank if not applicable)* — This information is continued on an additional sheet ☐

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A. The indications made below relate to the microorganism referred to in the description on page 243, line N/A

B. IDENTIFICATION OF DEPOSIT — Further deposits are identified on an additional sheet ☐

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Address of depositary institution *(including postal code and country)*

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Date of deposit	Accession Number
June 11, 1998	209965

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Claims

What Is Claimed Is:

1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 95% identical to a sequence selected from the group consisting of:

(a) a polynucleotide fragment of SEQ ID NO:X or a polynucleotide fragment of the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X;

(b) a polynucleotide encoding a polypeptide fragment of SEQ ID NO:Y or a polypeptide fragment encoded by the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X;

(c) a polynucleotide encoding a polypeptide domain of SEQ ID NO:Y or a polypeptide domain encoded by the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X;

(d) a polynucleotide encoding a polypeptide epitope of SEQ ID NO:Y or a polypeptide epitope encoded by the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X;

(e) a polynucleotide encoding a polypeptide of SEQ ID NO:Y or the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X, having biological activity;

(f) a polynucleotide which is a variant of SEQ ID NO:X;

(g) a polynucleotide which is an allelic variant of SEQ ID NO:X;

(h) a polynucleotide which encodes a species homologue of the SEQ ID NO:Y;

(i) a polynucleotide capable of hybridizing under stringent conditions to any one of the polynucleotides specified in (a)-(h), wherein said polynucleotide does not hybridize under stringent conditions to a nucleic acid molecule having a nucleotide sequence of only A residues or of only T residues.

2. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment comprises a nucleotide sequence encoding a secreted protein.

3. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment comprises a nucleotide sequence encoding the sequence identified as SEQ ID NO:Y or the polypeptide encoded by the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X.

4. The isolated nucleic acid molecule of claim 1, wherein the polynucleotide fragment comprises the entire nucleotide sequence of SEQ ID NO:X or the cDNA sequence included in ATCC Deposit No:Z, which is hybridizable to SEQ ID NO:X.

5. The isolated nucleic acid molecule of claim 2, wherein the nucleotide sequence comprises sequential nucleotide deletions from either the C-terminus or the N-terminus.

6. The isolated nucleic acid molecule of claim 3, wherein the nucleotide sequence comprises sequential nucleotide deletions from either the C-terminus or the N-terminus.

7. A recombinant vector comprising the isolated nucleic acid molecule of claim 1.

8. A method of making a recombinant host cell comprising the isolated nucleic acid molecule of claim 1.

9. A recombinant host cell produced by the method of claim 8.

10. The recombinant host cell of claim 9 comprising vector sequences.

11. An isolated polypeptide comprising an amino acid sequence at least 95% identical to a sequence selected from the group consisting of:

(a) a polypeptide fragment of SEQ ID NO:Y or the encoded sequence included in ATCC Deposit No:Z;

(b) a polypeptide fragment of SEQ ID NO:Y or the encoded sequence included in ATCC Deposit No:Z, having biological activity;

(c) a polypeptide domain of SEQ ID NO:Y or the encoded sequence included in ATCC Deposit No:Z;

(d) a polypeptide epitope of SEQ ID NO:Y or the encoded sequence included in ATCC Deposit No:Z;

(e) a secreted form of SEQ ID NO:Y or the encoded sequence included in ATCC Deposit No:Z;

(f) a full length protein of SEQ ID NO:Y or the encoded sequence included in ATCC Deposit No:Z;

(g) a variant of SEQ ID NO:Y;

(h) an allelic variant of SEQ ID NO:Y; or

(i) a species homologue of the SEQ ID NO:Y.

12. The isolated polypeptide of claim 11, wherein the secreted form or the full length protein comprises sequential amino acid deletions from either the C-terminus or the N-terminus.

13. An isolated antibody that binds specifically to the isolated polypeptide of claim 11.

14. A recombinant host cell that expresses the isolated polypeptide of claim 11.

15. A method of making an isolated polypeptide comprising:

(a) culturing the recombinant host cell of claim 14 under conditions such that said polypeptide is expressed; and

(b) recovering said polypeptide.

16. The polypeptide produced by claim 15.

17. A method for preventing, treating, or ameliorating a medical condition, comprising administering to a mammalian subject a therapeutically effective amount of the polypeptide of claim 11 or the polynucleotide of claim 1.

18. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:

(a) determining the presence or absence of a mutation in the polynucleotide of claim 1; and

(b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or absence of said mutation.

19. A method of diagnosing a pathological condition or a susceptibility to a pathological condition in a subject comprising:

(a) determining the presence or amount of expression of the polypeptide of claim 11 in a biological sample; and

(b) diagnosing a pathological condition or a susceptibility to a pathological condition based on the presence or amount of expression of the polypeptide.

20. A method for identifying a binding partner to the polypeptide of claim 11 comprising:

(a) contacting the polypeptide of claim 11 with a binding partner; and

(b) determining whether the binding partner effects an activity of the polypeptide.

21. The gene corresponding to the cDNA sequence of SEQ ID NO:Y.

22. A method of identifying an activity in a biological assay, wherein the method comprises:

(a) expressing SEQ ID NO:X in a cell;

(b) isolating the supernatant;

(c) detecting an activity in a biological assay; and

(d) identifying the protein in the supernatant having the activity.

23. The product produced by the method of claim 20.

<110> Human Genome Sciences, Inc.

<120> 98 Human Secreted Proteins

<130> PZ031.PCT

<140> Unassigned
<141> 1999-07-28

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<213> Homo sapiens

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tctcccggac tcctgaggtc acatgcgtgg tggtggacgt aagccacgaa gaccctgagg 180
tcaagttcaa ctggtacgtg gacggcgtgg aggtgcataa tgccaagaca aagccgcggg 240
aggagcagta caacagcacg taccgtgtgg tcagcgtcct caccgtcctg caccaggact 300
ggctgaatgg caaggagtac aagtgcaagg tctccaacaa agccctccca acccccatcg 360
agaaaaccat ctccaaagcc aaagggcagc cccgagaacc acaggtgtac accctgcccc 420
catcccggga tgagctgacc aagaaccagg tcagcctgac ctgcctggtc aaaggcttct 480
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gactctagag gat 733

<210> 2
<211> 5
<212> PRT
<213> Homo sapiens

<220>
<221> Site
<222> (3)

<223> Xaa equals any of the twenty naturally ocurring L-amino acids

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<210> 3
<211> 86
<212> DNA
<213> Homo sapiens

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cccgaaatat ctgccatctc aattag 86

<210> 4
<211> 27
<212> DNA
<213> Homo sapiens

<400> 4
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<210> 5
<211> 271
<212> DNA
<213> Homo sapiens

<400> 5
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gcccctaact ccgcccagtt ccgcccattc tccgccccat ggctgactaa ttttttttat 180
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ttttggaggc ctaggctttt gcaaaaagct t 271

<210> 6
<211> 32
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<213> Homo sapiens

<400> 6
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<210> 7
<211> 31
<212> DNA
<213> Homo sapiens

<400> 7
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<210> 8
<211> 12
<212> DNA

<213> Homo sapiens

<400> 8
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<210> 9
<211> 73
<212> DNA
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ccatctcaat tag 73

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<211> 256
<212> DNA
<213> Homo sapiens

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cagttccgcc cattctccgc cccatggctg actaattttt tttatttatg cagaggccga 180
ggccgcctcg gcctctgagc tattccagaa gtagtgagga ggcttttttg gaggcctagg 240
cttttgcaaa aagctt 256

<210> 11
<211> 1564
<212> DNA
<213> Homo sapiens

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<210> 12
<211> 1757
<212> DNA
<213> Homo sapiens

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aaaaaaaaaa aaaaaaa 1757

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<211> 1373
<212> DNA
<213> Homo sapiens

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<210> 14
<211> 3740
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (957)
<223> n equals a,t,g, or c

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<211> 1196
<212> DNA
<213> Homo sapiens

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<211> 2209
<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<212> DNA
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<212> DNA
<213> Homo sapiens

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<210> 112
<211> 1037
<212> DNA
<213> Homo sapiens

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<223> n equals a,t,g, or c

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<221> SITE
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<400> 112

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<223> n equals a,t,g, or c

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<212> DNA
<213> Homo sapiens

<400> 31
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<210> 32
<211> 3280
<212> DNA
<213> Homo sapiens

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<210> 33
<211> 1297
<212> DNA
<213> Homo sapiens

<400> 33

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<210> 34
<211> 2184
<212> DNA
<213> Homo sapiens

<400> 34

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<210> 35
<211> 949
<212> DNA
<213> Homo sapiens

<400> 35

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tttttttttt ttttgcacc aaagtggcaa ctaggtcagt gttgggggat caagctggcc     240
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaa 949

<210> 36
<211> 3338
<212> DNA
<213> Homo sapiens

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<222> (2861)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (3328)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (3330)
<223> n equals a,t,g, or c

<400> 36
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<210> 37
<211> 1563
<212> DNA
<213> Homo sapiens

<400> 37

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<210> 38

<211> 1048
<212> DNA
<213> Homo sapiens

<400> 38
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cacaggagcc acttcccact tcaactctcc cacaacctcc ccactgttta ctctcttcat 180
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1020
aaaaaaaaaa aaaaaaaagg gcggccgc 1048

<210> 39
<211> 1430
<212> DNA
<213> Homo sapiens

<400> 39
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<210> 40
<211> 2103

<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (2101)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (2102)
<223> n equals a,t,g, or c

<400> 40
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<210> 41
<211> 2349
<212> DNA
<213> Homo sapiens

<400> 41
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<210> 42
<211> 1559
<212> DNA
<213> Homo sapiens

<400> 42
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<210> 43
<211> 1766
<212> DNA
<213> Homo sapiens

<400> 43

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<210> 44
<211> 2572
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (2527)
<223> n equals a,t,g, or c

<400> 44
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<210> 45
<211> 526
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (66)

<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (106)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (484)
<223> n equals a,t,g, or c

<400> 45
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<210> 46
<211> 1032
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (974)
<223> n equals a,t,g, or c

<400> 46
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<210> 47
<211> 2680
<212> DNA
<213> Homo sapiens

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<210> 48
<211> 1730
<212> DNA
<213> Homo sapiens

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<210> 49
<211> 1275
<212> DNA
<213> Homo sapiens

<400> 49
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<211> 1762

<212> DNA
<213> Homo sapiens

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<222> (447)
<223> n equals a,t,g, or c

<400> 50

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<211> 2059
<212> DNA
<213> Homo sapiens

<400> 51

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aaaactgtgt tgttctggtc ttataaccaa gataaatggg cctggaatga tgttccttgt     660
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<210> 52
<211> 3282
<212> DNA
<213> Homo sapiens

<400> 52

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<210> 53
<211> 1860
<212> DNA
<213> Homo sapiens

<400> 53
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<210> 54
<211> 770
<212> DNA
<213> Homo sapiens

<400> 54
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<211> 1093
<212> DNA
<213> Homo sapiens

<400> 55
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<210> 56
<211> 632

<212> DNA
<213> Homo sapiens

<220>
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<222> (29)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (46)
<223> n equals a,t,g, or c

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<222> (94)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (162)
<223> n equals a,t,g, or c

<400> 56
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<220>
<221> SITE
<222> (1614)
<223> n equals a,t,g, or c

<400> 57
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acaacaaaac atccagggcc acccagtttc ctgatggtgt ggatgtacgt gtccctggct    360
ttgggaagac cttctcactg gagttcctgg accccagcaa aagcagcgtg ggttcctatt    420
tccacaccat ggtggagagc cttgtgggct ggggctacac acggggtgag gatgtccgag    480
gggctcccta tgactggcgc cgagccccaa atgaaaacgg gccctacttc ctggccctcc    540
gcgagatgat cgaggagatg taccagctgt atggggcccc cgtggtgctg gttgcccaca    600
gtatgggcaa catgtacacg ctctactttc tgcagcggca gccgcaggcc tggaargaca    660
```

```
agtatatccg ggccttcgtg tcactgggtg cgccctgggg gggcgtggcc aagaccctgc      720
gcgtcctggc ttcaggagac aacaaccgga tcccagtcat cgggcccctg aagatccggg      780
agcagcagcg gtcagctgtc tccaccagct ggctgctgcc ctacaactac acatggtcac      840
ctgagaaggt gttcgtgcag acacccacaa tcaactacac actgcgggac taccgcaagt      900
tcttccagga catcggcttt gaagatggct ggctcatgcg gcaggacaca gaagggctgg      960
tggaagccac gatgccacct ggcgtgcagc tgcactgcct ctatggtact ggcgtcccca     1020
caccagactc cttctactat gagagcttcc ctgaccgtga ccctaaaatc tgctttggtg     1080
acggcgatgg tactgtgaac ttgaagagtg ccctgcagtg ccaggcctgg cagagccgcc     1140
aggagcacca agtgttgctg caggagctgc caggcagcga gcacatcgag atgctggcca     1200
acgccaccac cctggcctat ctgaaacgtg tgctccttgg gccctgactc ctgtgccaca     1260
ggactcctgt ggctcggccg tggacctgct gttggcctct ggggctgtca tggcccacgc     1320
gttttgcaaa gtttgtgact caccattcaa ggccccgagt cttggactgt gaagcatctg     1380
ccatggggaa gtgctgtttg ttatcctttc tctgtggcag tgaagaagga agaaatgaga     1440
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ttaggactgg ctccacaggg tggactggct gggccctggt cccagtccct gcctggggcc     1560
atgtgtcccc cctattcctg tgggcttttc atacttgcct actgggccct ggcncsgcag     1620
ccttcctatg agggatgtta ctgggctgtg gtcctgtacc cagaggtccc agggatcggc     1680
tcctggcccc tcgggtgacc cttcccacac accagccaca gataggcctg ccactggtca     1740
tgggtagcta gagctgctgg cttccctgtg gcttagctgg tggccagcct gactggcttc     1800
ctgggcgagc ctagtagctc ctgcaggcag gggcagtttg ttgcgttctt cgtggttccc     1860
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cggatgtgct attggcccca ggactgaagc tgcctccctt caccctggga ctgtggttcc     2040
aaggatgaga gcaggggttg gagccatggc cttctgggaa cctatggaga aagggaatcc     2100
aaggaagcag ccaaggctgc tcgcagcttc cctgagctgc acctcttgct aaccccacca     2160
tcacactgcc accctgccct agggtctcac tagtaccaag tgggtcagca cagggctgag     2220
gatggggctc ctatccaccc tggccagcac ccagcttagt gctgggacta gcccagaaac     2280
ttgaatggga ccctgagaga gccaggggtc ccctgaggcc cccctagggg ctttctgtct     2340
gccccagggt gctccatgga tctccctgtg gcagcaggca tggagagtca gggctgcctt     2400
catggcagta ggctctaagt gggtgactgg ccacaggccg agaaaagggt acagcctcta     2460
ggtggggttc ccaaagacgc cttcasgctg gactgagctg ctctcccaca gggtttctgt     2520
gcagctggat ttctctgtt gcatacatgc ctggcatctg tctccccttg ttcctgagtg      2580
gccccacatg ggctctgag caggctgtat ctggattctg gcaataaaag tactctggat      2640
gctgtaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaag ggcggcc                   2687
```

<210> 58
<211> 619
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (526)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (619)
<223> n equals a,t,g, or c

<400> 58

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tcatcagctt tcacctggat tatcgtgaca gcctcctact gcttctctat catgtggcca       60
gagctatctt cctaaaatgc attgcatagt tgatcaagtc actctctggc ctaaaacctt      120
ccttggctcc ctgctgccct caggataaag tctggacccc tcagcatggc ttgtgagact      180
catggtgtcc ttgtccctgc tcacctctct ggtctcatca cttgccttct tgcattctgg      240
gtcccagcct cctgtatcca gagatgcagt ggctctccat tgccactctg attcctcctt      300
tcttttggtc acagagaaag ggtactttct ctgtcaaatc tcaacttaga cttgacttcc      360
tccaaggagc tttggctata ctctctcctc ccgaccccca ccctggcata ctacacagat      420
```

```
cactctgggc tcacttgcct gcctaatggt catctcccca gtagactgta agctccttga     480
gggcaaggat tgtgttggaa tttttgtatt aacagtgcct ggcttngtgc ctggcaccta     540
gaaagcactc aataaatgtt tgtttaatga aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa     600
aaaaaaaaaa aaaaaaaan                                                  619
```

<210> 59
<211> 1378
<212> DNA
<213> Homo sapiens

<400> 59

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tcgacttctg ggatgtagat tctcctttat tgaattcttc attttcactc gcagtatgat      60
ttattttttt cacactgtat tttacactgc atatgtttct cttataacga gggtcacttt     120
cttcctgccc aggattggaa tcaattacag ctatgcaatg tttttgtttt agcatcttct     180
taattacagg cttggcagaa gagttttgtg aacaactctc catttcactg gctgaagaag     240
aaatacaact gtcctctaca gttgaacatt tctgtatgac agcattttca tggtaatgag     300
gattaggttc atactttggt ttttccaaac cggggaaaca aacaacagcc aaaaaccagt     360
gtgcagcttc attaaggggt acaaaaataa aatccttctc aaaaatatct acgtgccggg     420
tccatgtttt tactctccca tgccgttttt gctgtattga cagattagtt gtttcatgat     480
ttctcctctc tctctgatta aggcgtttat agaaaaaaga actgaatata tgaattcggt     540
cagcgtcttc cttcttcagt tttcaagca ccaagtattt caaataaaag tctataataa      600
catcatttaa aaattctcct tcatttagac agtgcaggtc ctcattggta acagagatgc     660
ctcccttagc tggaggtggt ggatatacta tcaacttttc tactgggcca atgaagatgg     720
tgtggttttc tccagtttct tcttcttcat caaaaaactg aaattcttgt ttgcttctaa     780
gttgtatttt agatttaaat gatacagttt taattttgtt ttccttttgc ccacaacttc     840
ctttgatgct ctcttcatag gttcttgtac aggcaacaag tctgccatta gcttcttcaa     900
agggaatttt cgcaaaaaaa ttggagatgt tattctttat accaatttca ttaatgatac     960
tttcaaatac catatttgcc ggaggatcaa ggccattttg aaaaattaaa attatatatt    1020
gttcttctaa atttgttaat ttatttactc ctttacaatc attccaaact ttatcctcct    1080
tattcatttg cagttggatg ctcagctttt gataaactgc tggaattgct tgaagaaaca    1140
ctacaggtaa ttttcggaca ttacaccatt cacatttagt tagatcagag gtatttaata    1200
taatctctac aggatcatgg tctggttcgt ctagctgtat cttgataaaa tctaaacaaa    1260
aaattacagg ctctattaac agccggaaga gtgttcctac tcgtcgacgc ggccgcgaat    1320
tcccgggtcg acgagctcac tagtcggcgg ccgctctaga ggatccctcg aggggccc      1378
```

<210> 60
<211> 1126
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (21)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (35)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (49)
<223> n equals a,t,g, or c

<220>
<221> SITE

<222> (99)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (1012)
<223> n equals a,t,g, or c

<400> 60
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tccggcttcg taatgtggtg ngaaattgta acggnataac aatttcacnc aggaaccagc     60
tatgcccatg attacgccaa gttcgaaatt aaccctcant aaaggaccaa aagtgaagtt    120
ccaccgcggt gccggcccgc tctagaaact agtggatccc ccgggctgca ggaattcggc    180
acgagccggc ccgtaccgcc aggcgatcgc gctgatggcg gcgctggcag cagcggccaa    240
gaaggtgtgg agcgcgcggc ggctgctggt gctgctgttc acgccgctcg cgctgctgcc    300
ggtggtcttc gccctcccgc ccaaggaagg ccgctgcttg tttgtcatcc tgctcatggc    360
ggtgtactgg tgcacggagg ccctgccgct ctcagtgacg gcgctgctgc ccatcgtcct    420
gttcccctc atgggcatct tgccctccaa caaggtctgc cccagtact tcctcgacac     480
caacttcctc ttcctcagtg ggctgatcat ggccagcgcc attgaggagt ggaacctgca    540
ccggcgaatc gccctcaaga tcctgatgct tgttggagtc cagccggcca ggctcatcct    600
ggggatgatg gtgaccacct cgttcttgtc catgtggctg agcaacaccg cctccactgc    660
catgatgctt cccattgcca atgccatcct gaaaagtctc tttggccaga aggaggttcg    720
aaaggacccc agccaggaga gtgaagagaa cacaggaata gaacccaata ctttcctctc    780
tgaggaaagg ctgaaacttc aagctcccct tgtgataaga cttggtcaga taactgagtc    840
tggtcaatgg aatatgagtg gaaatgatgc gtgcaacttc cgggttctgt ccttcctgcc    900
gggtggaatg tgaatatgat ggcacctggg acccaaagac aggagccaca tcttgagaga    960
tagatggcag atctgcccct gtggctttgg atcatttacc tcagtgaaca cnacaagcat   1020
tatccatgaa accataggtt ttgtgtgcta gttctagttt ttaaaatatg aattaaatta   1080
aatacgtatc tgttaaaact taaaaaaaaa aaaaaaaaaa ctcgag                  1126
```

<210> 61
<211> 2078
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (337)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (492)
<223> n equals a,t,g, or c

<400> 61
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gattattttc aatagattgt caataaatta tcaaattatg gaaatatcct ttagattcct     60
gtgataatgc tttgtgcatg ttttctatta tttagaaaat gaaaacagca gtcatttgac    120
cagccatgtt atgacaccag ataatattct gcaaggatct tccaaacagg gagaaactgc    180
aatgggaaca atctttggat atctacattg tgtcaaatgt tatgtgcttt atttcatttt    240
catacttata acagctgtat atcacagttt ttattatcca cattatagag gcaaggcact    300
gatatcagga acttgagtaa ttggcttaca cagcaantgt agttgaaata gaagccagga    360
ctgtctgatt cccaagacag tgttcttgta ctgcaggtaa gcctggtgtt gctgggkttc    420
cctagcactg agtattgcag aaatacggag atttatttac tcaggtgaat gatgaagcag    480
aatctttatt tngcttttta aattatkgat gggkcckgag ttaagctagt tcaccaatga    540
gtctcaaagg gtgaagaact ggcctctgta gttttaaaac aaagcagcag tttctttcat    600
ttgtagatat tatatttaat ttaccttgca tttccaatag cattaaatat tagaagcgta    660
taagcttttt ctttttatgc ctaggggata tggcttaaca ctgagaaaca cttgagaaac    720
actgccacat tctaaggaac aaccaataat aagaaaaatt atttcatata aaaggatgca    780
```

```
gcttgcatat aaaatgctga attcaactga agttcattat gctgccttta tgtgagctca     840
ggggtgacct tcatgctctg gactcttaaa ggatccagtg tcggatacag ctctgccatt     900
ggagcaatgt gttccataac tagggttgcc taagtatatc ccttcttctg ktatctatag     960
tttttcttta aaggtgtgct tttcaaaaca tgatgttatt tcatatacmt atatatatat    1020
atgcacacat acatatacmt catgcatgka tcatatatgt gtgtgtatgt atgtatctat    1080
cttcaatctt tcaggaaagt ttgtaaaawa tagccctaag tagaattatg gggaaacagt    1140
tgcagaactg ctgaaattgg ctcagatgaa aaggaaagag caaaaatcta ggttattcac    1200
aggaagttag tccagctgtg ttttgcgagg catgaaccag gctgaatcag agcaagaaca    1260
ggttgcaatc ttaggtcaca tggcaattaa attccagcta tagaatattg aagacatgta    1320
agtgcttaat ttaaggatta ttcaatgcag tgaataaatt tatatcattc ccaaaagtat    1380
gcacatcaga taatgagtta actgcatgta acttgaaaac cttaaatatt taactgaaag    1440
gattttgtgc atagaaagat gtcttagtca atgtaaaaat gccagtgatt tgtgtagcat    1500
gtcctttgct aaaagtcatt atataaactg aagtcactta tctttgtttc caatgtgata    1560
atattccaca tttaacaggt gataattatt gaaaatatta gtttgcctca ctaatattgt    1620
gtccgagata ttctagttta aaccaagtaa ctaatactgt aaaagaagta ttccttttat    1680
gaagccagca ttatcctgat actagaactg ggaagagaca cacacaaaaa gaaaacttca    1740
ggccaatatc gctgatgaac atcaatgtga aaatcttcaa taaaatactg gcaaaccgaa    1800
tccagcagca tgaggcgggt ggatcacaag gtcaggagat cgagaccatc ctggctaaca    1860
tggtgaaacc ccatctctac taaaaataca aaaaattagc cgggcatggt gatgggcacc    1920
tgtagtccca gctactgggg aggctgaggc aggagaatgg cgtgaacctg ggaggcggaa    1980
cttacagtga gccgagattg caccactgca ctccagcctg ggtgacagag caagactctg    2040
tctcaaaaaa aaaaaaaaaa aaaaaaaaaa aactcgta                             2078
```

<210> 62
<211> 762
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (10)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (12)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (42)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (219)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (747)
<223> n equals a,t,g, or c

<400> 62

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cgagtcagtn ancgagaaag cggaagagcg cccaatcgca anccgcctct ccccgcgcgt      60
tgcccgattc attaatgcag ctggcacgac aggtttcccg actgaaaagc ggccagtgag     120
cgcaacgcaa ttaatgtgag ttagctcact cattaggcac cccaggcttt acactttatg     180
cttccggctc gtatgttgtg tggaattgtg agcggatanc aatttcacac aggaaacagc     240
```

```
tatgaccatg attacgccaa gctcgaaatt aaccctcact aaagggamca aaagctggag      300
ctccaccgcg gtggcggccg ctctagaact agtggatccc ccgggctgca ggaattcggc      360
acgagcacaa atgcctatac aaaacttttt tccatgtcct caatactttg tatcagatta      420
tttatatttc tcatggtttg gtttcttttt cttgtcttca ttttctgaa ggtaaaaggg      480
gatttttcc cccctttct gatctgtaac ttgttttgta tttggatgat tacaggcgtg      540
agccaccgcc tccagccaca aatacttttt agtcgccata agcataatca agaaatcatt      600
ttgcaaatgg taagcttttc atgttgtgta ttctttccca tgattagaga ggtaaaaagt      660
gscctgggat gcataaagat gtcgtagacm tmtgcaatct gccacattat ttctttaaaa      720
aaaaaaaara aaaactcgag gggggnacg gaacccaggg cg                          762
```

<210> 63
<211> 1094
<212> DNA
<213> Homo sapiens

<400> 63

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tcggcacgag gtcaatcaag tgaaatatca tgtaaactgt ccagcagctt tgaaagtaga       60
gaatgaacaa ggccccttcc ccacccaccc tgtggaaagc ccgtctggtt tggtgtcctc      120
ctggacagcg tcttgccggt cacctttggc catctcccgg tgcgtggttc agatgtgggt      180
cctgctttcc tgccccctcc ctcctctgtg cctgcctgcc tctgctgtgc cgggccagtg      240
ccttggtggc cagtggagtg gacaccagct gcgactgcgt gggaggggct ggcattgccg      300
ctgccactgc agggcttggg cggctgacat gggacgaggc ttgcacagct gccagctcct      360
gtctcgctga cttttttat acagttttgt ctgggccacc gccttcagtg ccacgggccc      420
cttgccgttc aggctgctcc tcatagatga acaaggccct gccccgtgtc cttacccttt      480
agagctgttt aaattcaaat gaactgaaac tgaatatgaa aaatccaggc cctcagccgc      540
ccaggccatg tttcaagtgc tccatggcca catgtggctg gtggacagtg cagctctaga      600
acattccatc accacagagg gttctgctgg acagtggcct tgggggctgt tttgagggtc      660
cgcctgtcag tctcctggca tcaaagtcat tctgccattg tcaagttaca gttattttcc      720
ttttacctcc aagccactat gtgcgtatgc tgctatgtgt ctgtatttcc cgctaaactt      780
cctgtcacgg agggaagggt gccacaggcc cagctcctgg agggggtttg gatgtctggg      840
tgggggaag ggtgccacag gcccagctcc cggagggggt ttggatgtct gggtgggggc      900
cagggcgcca cagttccagc tcccggaggg ggtttggatg tctgggcggg gctttcttca      960
tgttccatgt atgataacgg tgactggggg gtttacagag agaggcatac aaatagtgtt     1020
ggagtgttgt tttcgctaat ataaatgttt gaatagctaa aaaaaaaaaa aaaaaactcg     1080
agggggggcc cggt                                                      1094
```

<210> 64
<211> 1361
<212> DNA
<213> Homo sapiens

<400> 64

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cccgggtcga cccacgcgtc cgaatttctt tagtgtattt tatgtacttt tgtattaatt       60
acattgggta gactgttcca taaatgttga atagatccta tttgttggtt aatgctattg      120
ttgtgtatcc tgctgatttt ctgtgtagtt ggtctatcag ttgttgggag aagagtgttg      180
aagtctacaa ctataattgt gtatttgtct attactcctt tcagttcttt cagttccatt      240
tcacatattt tccagctctt gattggtgca cattaatgat tactatgtct tcttggtgaa      300
tagaccattt tataatttta tgatgtacct ctcttgtcac tttctttgct ctgaagtcta      360
cctgatatta atatagtcac tctagctttc tttggagtaa tgttagtgtg atatatcttt      420
tttcgtcctt ttacttttaa ccctatctat atcattatat tattttaagt gagtttttg       480
tagatagcac ttacttgtgt ctgtcatgtt tttaaatcca ctgtacaagt acaaatctgt      540
ctttattttt catttttatc cttattttga gacagagtct cactttgaca ctcagcctag      600
aatgcagtgg tgtgatctcg gctcactgca acctctgcct ccgagggtca agcaatcctt      660
tcacctcagc ctcccaagta gctgggacta caggcatgaa ccaccatgcc tggctaattt      720
tttttttttt tttttttgta gagatgggga tttaccatgt tgctgaggct ggccctgaac      780
ccctgggctc aaacgacctg cccagctcag cctcccagag aaatatgatt ttaattagca      840
catttagatc atttactttc aatggaatta ttgatgtatt acaattcaag tctgtcattt      900
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tatttattgc cttccatttt tccctccgtt tttcatttct gtgctttttt tctttgcatg 960
taaacatgtt ttaggattct gttttgatgt atttagagta tttttagtg tatcggttta 1020
tgtagctttt ctagtggatc ctttaagtat tacattatat atacataact aagaagtata 1080
tcagtgtcat catttacca gttcaagtaa agtacagaaa tctttgtccc ttttacctgt 1140
cctgcttata atgtaaatgt cttaaagatt tccttgacac acatttagaa ccatatcaca 1200
gtgttgtttt tgcttcagtt gtgaaatata atttagaaac tcatgagaat aaaaacccat 1260
tatatttatt tataaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1320
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa agggcggccg c 1361

<210> 65
<211> 947
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (67)
<223> n equals a,t,g, or c

<400> 65
ctttctatag ttaaagccgg tacgcctgca ggtaccggtc cggaattccc gggtcgaccc 60
acgcgtncgg tttctgggtt ctaggccctg cttccttgcc cctttgctgc agaagggcag 120
ctgaaggctc accctagaaa ccgggcctgg tgggtcttac ccggctcact ccctcccttg 180
tccttacaca tacaggaaga caagacctga gtggtgctgt ctttgtgtcc gtcgtgtatg 240
gctctccctg tcttcatttc ttctcactct gtctctaaac ctctctctct ctcccttccc 300
cctcagtact tartctacag acctatgtgc gtgtycctat ccttctgtcc ttttctctct 360
tcagctctcc ctgcctctca cacacaattt tacatgcccc gaggagccaa gtttgggaca 420
tttaccctcc aggcatctgt gtcccctctt gaagagaaaa cacacagctt cacacatcca 480
ggcatagggg gcaagctctt ggggcatcag gaccctggag caccaggtcc ttcctggaat 540
attagatcca cctggagcac caggtctctc taagtctcac ctggggaatt cggtccccacc 600
tgggtcacca gttcccacct agagcactgt gtcctgccct agagcacaaa gacctgctcc 660
tcccgagact ctctctgact gcagccaggc atagtaccct tgcctgtgtt tgctccctgg 720
tccacagatt tggtggctgg gcaggtgcct ggacagtgat gaggtcttgc cgccttaact 780
gtcccccccca gtcacttctc ccacaggccc agcaggacgc agtcctgagg atcagggatt 840
ctacagctgc attaaaatca atcctatcca aaaaaaaaaa aaaaagggcg gccgctctag 900
aggatccaag cttacgtacg cgtgcatgcg acatcaagct ctgaaga 947

<210> 66
<211> 1376
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (18)
<223> n equals a,t,g, or c

<400> 66
ggcgggcggc gcggaagngg cggckgcgcg gccggggcag ccatgtcgcc attgtctgcg 60
gcgcgggcgg ccctgcgggt ctacgcggta ggcgccgcgg tgatcctggc gcagctgctg 120
cggcgctgcc gcgggggctt cctggagcca gttytccccc cacgacctga ccgtgtcgct 180
atagtgacgg gagggacaga tggcattggc tattctacag cgaagcatct ggcgagactt 240
ggcatgcatg ttatcatagc tggaaataat gacagcaaag ccaaacaagt tgtaagcaaa 300
ataaaagaag aaaccttgaa cgacaaagtg gaatttttat actgtgactt ggcttccatg 360
acttccatcc ggcagtttgt gcagaagttc aagatgaaga agattcctct ccatgtcctg 420
atcaacaatg ctggggtgat gatggtccct cagaggaaaa ccagagatgg attcgaagaa 480
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<210> 67
<211> 2434
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (10)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (12)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (27)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (73)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (75)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (103)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (130)
<223> n equals a,t,g, or c

<400> 67
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cgtgtttcct ttntncgagt agtgtgctgt gtaaactaaa ttngccggtt cgctttccat 120

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ttcctgacan ttgagatgga atgccttgac cattggtgct ctgacagaga agtcatggag      180
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gctagtgctt gctgagtgca tactaagaaa gcaattccaa atagatgtat acatctagag     1020
agagtggtat tagagattca gtgtatgtat ttatttacat gagaggaaac tggaatataa     1080
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa                                 2434
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<210> 68
<211> 1086
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (10)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (77)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (1056)

<223> n equals a,t,g, or c

<400> 68

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ctcagcagct ctggaaaatt acctgtctgc actgaatttc ctcatcagta aaatggaaat     180
gattatagta ctgaccttgt aggattattc taaaaatcag agaagttcat gcagcttaga     240
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cgtcatcacc atgtgattgt gccttgcttg tccctgtttc acttttcaga gggagaaaag     360
tggcccactt taagaatcaa aattctgatg ttacttcggg aaatgcatag agccagagag     420
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atatcttaga tctttataag agcacttaag ttcaacctcc taagaaactg ccaattttgt     600
tgatcatgat agtctgcaca gatttcgta ctatttagtg ktgggagtgc cttagggacc      660
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aatgatttgt ttcaggagat tgtttacaac ttttatcttc ctagacaata atttctgta      960
agagtaaagt catggtcatt aaggtagtca tattaatgta ttcagtaasc tgtgaagaaa    1020
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<210> 69
<211> 1262
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (568)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (639)
<223> n equals a,t,g, or c

<400> 69

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attacatttt caaacaaaat ccaaagtttt taccatgacc ttgtggatat ctttctgacc     240
tcatttacta ctgttatctt ccttattcat tgcattccac ccacagtggc cttcttgcaa     300
gtcagagaat gcaacaaata tgctcctgcc ttggggcatt tgcacttctg ttcttttggc     360
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cactgccatc tccataccca ttttcatttt tccatagcac ttatccctac ttggcattat     540
gttatatatt tgtttatttg kttactgnct gtctccccca ctggactgta agctccatga     600
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actaattgtg tcactgaatt acaaaataag caaaatacta ggtaaacaga atcacgcttg     960
ggggctatat tttgtgtaaa atttgtgtta tgcaaaaata atattaaata tttaattact    1020
acagttttgt tatttctttc ttatttagg aaatgatttg cagctgagtg aatcaggaag     1080
tgacagtgat gactgaagaa atatytagct ataaataaaa atttatacag catgtataat    1140
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gataaaagaa attaaatttg atttcagaaat ttcaaaaaaa aaaaaaaaaa aagggcggcc     1260
gc                                                                     1262


<210> 70
<211> 1642
<212> DNA
<213> Homo sapiens

<400> 70
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tctgttacta gagtggagag tctaccttcg tctcacatgt gccacaaagg atggcatggc       180
ccgggagtgc cccaccacgt ggcttcacc ccctgcaaag ccagacttcg cccagcgaca        240
cagtgtcaag cccacagctc tccaaggagg aagatggtcc aggctgggag catcyccta        300
gcagcagcct ctgatccctt ggccaagcag gagggaacca ttagcagcct gaggagctgg       360
ctggctggga gcctcgggga ccgcccagcc ttgctcccag ctcacccaca agatgtggac       420
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acaagcagga cagatgtgag tgaaccagca acttcaggag gtgcagctga tggtgtgacc       720
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gaccaaacca agtgcttcca aattcttttg gtgcaattga ggagatatgc cagatgctta      1560
aacacattta attgctgtca gattaattcc atgatcacta aagagttgct gcttttttca      1620
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<210> 71
<211> 921
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (4)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (9)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (11)
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<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (15)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (20)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (901)
<223> n equals a,t,g, or c

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agataagatt aagggctggg tctgtgctca attaactcct gtgggcacgg gggctgggaa 180
gagcaaagtc agcggtgcct acagtcagca ccatgctggg cctgccgtgg aagggaggtc 240
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cctggatgac tcagttcagc ctcctgaaca agacctgctt ggagggattc cactgagtga 660
aacccactca caggcttgtc catgtgctgc tcccacattc cgtggacatc agcactactc 720
tyctgaggac tcttcagtgg ctgagcagct ttggacttgt ttgttatcct attttgcatg 780
tgtttgagat ctcagatcag tgttttagaa aatccacaca tcttgagcct aatcatgtag 840
tgtagatcat taaacatcag cattttaaga aaaaaaaaaa aaaaaaarct cgaggggggg 900
nccggtaccc agggcggaag a 921

<210> 72
<211> 906
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (34)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (833)
<223> n equals a,t,g, or c

<400> 72
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cccagatgtg actggargtg ccctggacct carcagcctg ccctgggtgg cagccccagc      660
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agattg                                                                 906


<210> 73
<211> 680
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (7)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (9)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (15)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (16)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (22)
<223> n equals a,t,g, or c

<400> 73
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gacctgtggg ccatgatgct accccaatgg ctgctgctgc tgttccttct cttcttcttt      180
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cctccctacc cagagctctg tgktcaccct gttccccaga gcctccacca tgagtggagg      600
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aaactcgagg gggggcccgg                                                  680


<210> 74
<211> 1633
<212> DNA
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<213> Homo sapiens

<400> 74

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cagggagaag gagggaggag ttacccccac gatgacctcc aacttccctt tctgcaccct    180
catcctgggg atagcacagg ctcaggcctg ccctggttgc cctggcgatt ggcctggcct    240
gggctcaggg gtgggggagg ggctgcacca cattaggacc tgccgtactc caatcccatg    300
cagtcctcct gctcctgctg ctgcgtgcct gggctctggt catgccaggc ttccttgtgt    360
cctgcgtctg tggccggttc ctgccaacct gtctagtcct ttcaggcttg aggccctgca    420
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cagtggtaac attgttaaac aaaacaggaa aatgggactt gtgtgtatat atgattaaat   1560
tattaattga tggatctacc ttcttagctc gtgccgaatt cgatatcaag cttatcgata   1620
ccgtcgacct cga                                                      1633
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<210> 75
<211> 1022
<212> DNA
<213> Homo sapiens

<400> 75

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aagatggcaa aatgaggcta gttctggatg agctagctgg tgtgggttcc aaccatagga    120
acacactgat gctcaaatcc taaggtgcca agctctaggc cctggaggct ggtagaacag    180
gatctatgcc tggaatcctg gcagggattc ctgtcaagga cttgtgttta agcctgcttc    240
agggcttcag gctgcttctg ctctgtgtct gcccaggctg gctgagcggg tggatgggtg    300
gacagaaggg ctcaccaagg attgtggaca tagggtaggc cctggtacca cgggtttcag    360
gctgttatca cttcccttgt aggaacatag ccagaagcag atgagccagg gtagaggggct  420
ggcccctcct ctcatcttcc cttcagtctt aaattgtctc cagcgatggg aagaggccag    480
ggactgtaac ccttgtgctg tgtattctct gagcctctgc tcactctcag ggccaagcag    540
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gaaacaagct agaacaaccc tggcccagaa gactgtgcac tccagcaaga tccagggatg    720
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ggcactggga ctggtccctg ccctcatcct tagcctgggc cttccccaga ggtattaaag    840
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tcccaagggg cccccagtca cgtggtgaag cctagcactc atgcagctct tagggaacca    960
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cg                                                                  1022
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<210> 76
<211> 1184
<212> DNA
<213> Homo sapiens

<400> 76
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tggagctctt tccataacaa cacttggaaa gcactctcat cctttttttca ctgctgaaca    180
gaattccact gtgtggatgg aacatactct atttcaccag tcccctgtag ccagtcactt     240
ggtttgtttc caatcttttg ctttttcaga gtaataacct tgtatgtcta tcattttgta     300
tgcatacagg tttatatgta ggaaaaattc ctagagtagg attgctggac caatggataa     360
aagtatattg tggacagaca atgccaaatt gcctttcaga gactgtggcc ctgtgcaccc     420
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tctcaggctc aatgcagaac tttgaggtaa gctttctaa aatgtaggct cctaaacgcc      540
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atttctatcc tgcacagata tattttccac attctgggaa accgtgaagc ttccagagcc     660
acaattcccc agaaacacat cccctgctg gtacagccaa gccccagaac aagctgtgct      720
tgcctggcac ctcaaagcca agcaccatgg atgccacttg ccatgggtgc ctgcaatttc     780
aaataatgag aaataagaaa tttcagcttc tcagtccctc tagccaacat ttcaggtgca     840
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tccctgggga agatcacgag gtcaggagat caagaccatc ctggctaaca cagtgaaacc     960
ccgtctctac tgaaaataca aaacattagc tgggtgtggt ggcaggcacc tgtagtccca    1020
gctactcagg aggctgaggc aggagaatgg cgtgaacctg ggaggtggag gttgcagtga    1080
gccaagattg cgccactgca ctccagcctg gcaacagagt aagactccat atcaaaaaaa    1140
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa                     1184
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<210> 77
<211> 312
<212> DNA
<213> Homo sapiens

<400> 77
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agggccagcc cacccagcat ccccacccct gatgacgctg tccctacaac tggctgaact     120
ggtgcatttt gtgtgtgcct tccagagcca gtggactggt gtgtatccaa tgatgccacc     180
tctgaaacct acagaaccac tatgctttgc atgtgtaccc tgcagggtct gagggccagg     240
ctgtctggta gctctgctcc tgggtgacag agcaagactc tgtctcaaaa aaaaaaaaaa     300
agggcggccg ct                                                         312
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<210> 78
<211> 1370
<212> DNA
<213> Homo sapiens

<400> 78
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gcattcacca tgccaatcca aggcagctga tggcttagga aagtcagaga ctgagatgtt     180
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tggactatta gccctaaact ttttctgtac tgccactgca gggctgaagg agctttgcat     360
gcatccacca agtctggctt tcacacctga atttcacacc tcgctttcac ccttagctat     420
tccatctttc tgtggaacat cagtgtcact tagcaatagc catacaatcc cattatcctt     480
atacctacct ttcccttcaa agtctcggat gcctgataca ttgcacctgc tagtgcattc     540
actcccatta gtacactccc aagtccttcc agtgaaagat gtaacaattg aatggccact     600
ctgccaaagg tgcctgggct ctacctgcca ccagtgatgg ggtcctcaca gccaacccag     660
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tgtayctttt tcagagtctc cccagttagg tcaaaatgtg cgcctttaca cccgcacttc    960
cctcaatcac gggcttcagg ctgtcctggg catgacctca gatgaagcgg ctcacacagc   1020
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cgagcagcat gcccttgctt ggaggaggat ttggatgaca cagctctatg tctgccgtat   1140
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attccagttg caaaccaatt gtagaatact ataaaaccag agtacaagtc taatagcata   1260
aatctcatcc taagtggaaa agaaagggtc atttattcac acatttttgg ggaaaaaaaa   1320
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<210> 79
<211> 368
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (5)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (13)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (35)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (351)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (367)
<223> n equals a,t,g, or c

<400> 79
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ctagaactag tggatccccc gggctgcagg aattcggcac gaggtccagg tgtctttatt    120
tcagatgttc tgtttttcct ctattttctg ctcacatgaa catacacact tgccaggcac    180
attctggctt ttcttatttc tctttctgat tttgcctcct tcctgcccct gttttcttcc    240
cttttctctg gctatagaaa ctgtcaggtg gccttgctgg catcatccta cctcttttga    300
actgtgttac ccaggaactt ccatttatta tgcctcgagg gggggcccgg nacccaattc    360
ggaagant                                                             368

<210> 80
<211> 1088
<212> DNA
<213> Homo sapiens
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<220>
<221> SITE
<222> (1)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (4)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (5)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (9)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (11)
<223> n equals a,t,g, or c

<400> 80
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cggccgctct agaactagtg gatcccccgg gctgcaggaa ttcggcacga gattccccag     120
aattggttca tcttgggaaa ggaaggccta ggaagctgat gacctacttg ttttgttcat     180
ccatttctct actgcttctt aaagtgcact caagcggtca ccaggacatc agaaaagcca     240
aatccaaggt cccaaggctc ttgatcatcc agtgcccaca acagagggag taagctagac     300
ggagaagctg aagtgaagga ggaaagagag aagggggtgc ctgttccacc cccttcctag     360
cagctgcctc tgtgggctcc ataatcccca tgccctctcc cccaccccac cctccggccg     420
mccacctctc ctccacccac cccattcatc agtaggaggg cactgtatca gcacagcctt     480
tcaaggcctg acagttcctt tctgggtgcc ccccacatgt aaccacttaa cccccagcac     540
aaagggccag cctgaatggg cttggagccg gtggctcgtg cgraggggga ggcctcaata     600
ggatttgggg agctgggtgt ataaaccgct ctgctccagc agccctcaat ggaggagctg     660
gagttggggc atgtgccgag gggaggagct cggcagctgc atcccgsccc tgaacaatga     720
tttattcatt ctcctggcac gcacagagaa gacaggctgg ggaaacatgg ccccacaaat     780
cgccctcagc ctcagctgat tcccacggca atcattgcag ttcagagtgc cccctcccac     840
ttgtaatgtt ttgcctcaag cttgcccttc ctcttcctgg taaggaagta gactacatta     900
cgggaggcct taagtagcct taaattcagg caagcatcgt tctttgagtt ggttgcaccc     960
aaactcaatc tcactctctc aaagctttct ggccaggttt tcctcacaca cccatagaaa    1020
cagatgcaga caaaaaaaaa aaaaaaaaaa actcgagggg gggcccggaa cccaattcgg    1080
aagatttg                                                             1088
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<210> 81
<211> 1862
<212> DNA
<213> Homo sapiens

<400> 81
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tgtttgcaca agctattatc ttttgcaaga atgtcctgcc ccctcctatc catctgtgga     120
agtcaacctt tctttagggc ccagaggaaa acctatcacc ttctacacct tcccagatgc     180
ccaccatttg ggttaaactc tgccctctcc aggtttgcca tggtcttttc cctctcttaa     240
agcactggtc ccagccatg ccattgtgtg tcaccttggc tcctgtctcc tactggctgt      300
agatctttgg garggaggga actggggaat tttcatcctg ggctatggg atagtgctta      360
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cccctaagta taaaataagc aagaatcctt gaattgaaaa gctccagtga cttgatagct    420
tccaacagcc cctaaagatg gggtagtcca ctgctcccta tataggaagg aagaggttca    480
cagtcttcatg gatttagcag ccttcgtagc ctcaggatct ttcccaatgt ccccagttct   540
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gggccctccc tcctggacct gggtccatgt gaccaagtgg ccagccagcg agagagccct    660
gggtgatgag catctggaag tcagcttgct tgtctgccct aatcacagcc ctgggctcta    720
ccctcaagta ccctactcac atggtccaag agggaaccac tcttctgtca ttccctcccc    780
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aagttgttaa atggtgatta atttatctgg cctgaatggc akgtgaattc caaggggatc   1200
atttttctct accttccttg ctgcacattg ggacacagca aggccaggac acccttytta   1260
ggtgactgsg taaccaggtt cattaaggca gtcagcgcag agaagaagca gaaaatgggg   1320
aggagttgtg taaatgaaat tgccgataat accaaaggaa ccccaagaga ggttcagtct   1380
cccaacaatt gcagctttgc tgcaacatgg cagggtggga caggggtagg tttggatctg   1440
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ctttaattga ctttgtcatt ttastgagaa cttacaaatt gagctattct tcattgagtt   1560
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ccacgtgatg cagcttgttc atttctgaat tccttttaat gacaaaaaca tttggaagga   1680
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taaaagaagt gttgtccagg aggtggaggt tgcagtgagc tgagattgca ccactgcact   1800
ctagcctggg ccatagaatg agactccttc tcaaaaaaaa aaaagaaaaa aaaaaactcg   1860
ag                                                                  1862


<210> 82
<211> 1618
<212> DNA
<213> Homo sapiens

<400> 82
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ctcctgctct ttctcctgat gtgtgagatc cctatggtgg agctcacctt tgacagagct    180
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tcctcagcct cttcctccgg ccgcccccac gccctgcctg agatcagacc ctacattaat    300
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aggaagacct gtgctataaa ccaccctgcc tgatcctgcc cctgcctgac cccgctacgc 1560
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<210> 83
<211> 2034
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (14)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (382)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (1999)
<223> n equals a,t,g, or c

<220>
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<222> (2027)
<223> n equals a,t,g, or c

<400> 83
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aaaaaaaaaa aaactccana attacttcct aaaaccggcc cgcgggnccc atcc 2034

<210> 84
<211> 2240
<212> DNA
<213> Homo sapiens

<400> 84
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caacccaact ccttacagaa tgtttaaaag gcatcaaaga cttaaaaaag attcaactca 1260
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<212> DNA
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<400> 85

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<211> 3174
<212> DNA
<213> Homo sapiens

<400> 86

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<213> Homo sapiens

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<211> 1061
<212> DNA
<213> Homo sapiens

<400> 88
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<210> 89
<211> 1342
<212> DNA

<213> Homo sapiens

<400> 89
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<210> 90
<211> 770
<212> DNA
<213> Homo sapiens

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<222> (690)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (762)
<223> n equals a,t,g, or c

<400> 90
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<212> DNA
<213> Homo sapiens

<400> 91
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<210> 98
<211> 1957
<212> DNA
<213> Homo sapiens

<400> 98
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gagtggtccg gctgagcacc gccaacacct actcctacca caaagtggac ttgcccttcc 360
aggagtatgt ggagcagctg ctgcaccccc aggaccccac ctccctgggc aatgacaccc 420
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cacccccatt tggcctgctg ggaaccgctc cagcttacag ctttggaatc gcaggagctg 540
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cagcaaaagc gatgctgaga ggggaaacag tccagagtcc aacagcagaa cttgggggaa     1020
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ctcttccagc tccctggggg ttgaccagga gccggtcaga gatggacctg gccagatgtc     1860
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aaagccttcg ataaacaaaa aaaaaaaaaa aaaaaa                               1957
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<210> 99
<211> 1112
<212> DNA
<213> Homo sapiens

<400> 99

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ccagcgctgc ttcatcttcc agtgctgata attatggcat tagccatcct gagtttctgc      180
tatggtgctg gaaaatcagt tcatgtgctg agacatatag gcggtcctga gagagaacct      240
ccccaggcac ttcggccacg ggatagaaga cggcaggagg aaattgatta tagacctgat      300
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ccttatgcca aaacgtatga gggtagaaga gagattttga gagagagaga tgttgacttg      420
agatttcaga ctggcaacaa gagccctgaa gtgctccggg catttgatgt accagacgca      480
gaggcacgag agcatcccac ggtggtaccc agtcataaat cacctgtttt ggatacaaag      540
cccaaggaga caggtggaat cctgggggaa ggcacaccga aagaaagcag tactgaaagc      600
agccagtcgg ccaagcctgt ctctggccaa gacacatcag ggaatacaga aggttcaccc      660
gcagcggaaa aggcccagct caagtctgaa gccgcaggca gcccagacca aggcagcaca      720
tacagccccg caagaggtgt ggctggacca cgtggacagg atccggtcag cagcccctgt      780
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tctcacaagc tgccaaagaa cacatcccaa gcagtaatca cagatgatga agcaccttac      900
aggacccctc caccctcaaa cgcgcatgtc cagagaagta ttaatgcctt aatagactac      960
tgaaggttaa ctatttacat cattctaaaa atattttaag ctgtattaca gtgctataaa     1020
ttctcctttt aaggaaaaaa gtaatagatt gtttccttac cgtgtttgaa aggaaaaaaa     1080
ataaatccat agtaactaaa aaaaaaaaaa aa                                   1112
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<210> 100
<211> 887
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (303)
<223> n equals a,t,g, or c

<400> 100

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tatggactgt gcccctttct atatgtgtgt aatgcttcaa caaaagtgtc aatagtgatg    180
catgcacatg ttaaaatttc aaactatatt aaagagtgtg caattaaaag gaagttatcc    240
tctcactcta aagtcctatt tcctctcttc agtctatcat tactactagt ttctagtata    300
tcntttagaa atgkgctgta aaagaacaat gatgtgtatg tctctacagg tatatattta    360
ttctttttgt aattacaaaa atataaactc actacatatg ttattctacc acatgctttt    420
tttcatgtaa cagtatgtct tagacatctt ttcctattat tgcgtggaag ctatcaacct    480
tattctttgt aatgactcca taaattattc tactgtgaaa acacaccatg tttaaccagt    540
tctctgttag tgaacattta ggatttttcc agtttttaaa tattacagtg acatattaaa    600
cattaaacat atcttttgac acatgtcctt gcacacatgt ataggtatga tggactttaa    660
caccctttgg ctagattctt tagcacataa cgtaaatatc ccatagagtc aaaaccaccc    720
ttaaaacttc ctcaggaggc tgggtgtggt ggctcacgcc cgtaatccca gcactttagg    780
aggccgaggt gggcggatca cgaggtcagg agatcgagac catcctggcc aacatggtga    840
aaccctgtct ctactaaaaa tacaaaaaaa aaaaaaaaaa actcgta                  887
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<210> 101
<211> 1248
<212> DNA
<213> Homo sapiens

<400> 101

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gatatcaatg accttggtac catcaagctc agcctggaag tcacatggag ccccttcgac    180
aaggatgacc agccctcagc tgcttcttct gtcaacaagg cctccacagt caccaagcgc    240
ttctccacct atagccagag cccaccggac acaccctcac ttcgggaaca ggctttctat    300
aacatgctgc gacggcagga ggagctggag aatgggacag catggtccct gtcatctgaa    360
tcttcagacg actcatccag cccacagctc tcaggcactg cccgccactc accagcccct    420
aggcccctgg tgcagcagcc cgagcccctt cccatccaag ttgccttccg caggcctgag    480
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catgcaccct acagtcggac tctgagccac atcagtgagg ctagtgtaaa tgctgccttg    600
gctgaggctt cagtggaggc cgttggccca aaaagcctat cctggggacc tagcccacct    660
acacacccag ctcccaccca tggaaagcac cccagtcctg ttcctcctgc cctggaccct    720
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tgctcttctg tatgtgacaa catttttgta cattatgtta ttggaatttt ctttcataca   1140
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa                1248
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<210> 102
<211> 1841
<212> DNA
<213> Homo sapiens

<400> 102

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ctgatcatct tttgcaaatc tgccagcgca tcggtcctat gttggataaa gaaattccac    180
ccagtatttc aagagtcact tctttacttg gtgcaggaag gcagtctttg ctacgtacag    240
caaaaggtac cttaatttga agaagtgttc tgctttgtat taatagccta ataattatta    300
taattgtgaa gtaatgtaag catgtggaag aaaggtgata atgtaactat aaatcatgct    360
gtggactata aaattctctg catttagcat agaacattga attttattac ataagtgttt    420
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aatttattct gagatgttgt ttgaggtttt atcaatgtga gttcttaatt ttccattttg      540
tagctcactc ataacttcat tgaatgtaat tgtatgtgtc taataaactc tttaaatgct      600
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tgcttcaaac ctatgttctg ctgctatctc ctatagagga gggcagactt ttttttctta     1560
gtgcatttgc tggtaggtca aggagggatg gactttgaat tagtgttcag agtcacagat     1620
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ataatttatt ggtacttcct aaagatagag actaaagtca tggtagtatt ggccaaatta     1740
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<210> 103
<211> 685
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (678)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (679)
<223> n equals a,t,g, or c

<400> 103

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taattacatt gtctgattta gaatgtgatt acattaatgc tagatcatgt tgctcaaaat      180
taaacaagtg ggtaattcca gaattgattg gccataccat tgtcactgta ttactgctca      240
tgtcattgca ctggttcatc ttccttctca acttacctgt tgccacttgg aatatatatc      300
gatacattat ggtgccgagt ggtaacatgg gagtgtttga tccaacagaa atacacaatc      360
gagggcagct gaagtcacac atgaaagaag ccatgatcaa gcttggtttc cacttgctct      420
gcttcttcat gtatctttat agtatgatct tagctttgat aaatgactga agctggagaa      480
gccgtggttg aagtcagcct acactacagt gcacagttga ggagccagag acttcttaaa      540
tcatccttag aaccgtgacc atagcagtat atattttcct cttggaacaa aaaactattt      600
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aaaaaaaaaa aaaaaaanna aaaaa                                            685
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<210> 104
<211> 1168
<212> DNA

<213> Homo sapiens

<400> 104
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cctggccctc tcgctgttgc tggtctctgg ctcccctcctc ccagggccag gcgccgctca 180
gaacgtgaga gtacaatctg gacaggatca gaagtagaga atgaagttgt aagagaaagg 240
gaaagacaga agaaaggctg cagtagtaca aggagaaaag caggatgcaa gaatgaggaa 300
tgaatctttg tttgaggagc atccggaaaa atataagctg tcagaaagag taaatagacc 360
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aattttaaa atgttgttca taatatggag tttaatttta agcaccttag ataatgcatt 540
tgttagcttg tttgtgaaat ttttatggat tttttttttc aaaattccta attttagttg 600
gtaaggatta acttcgggaa gacaggaaac ccctccagta aaattaattg gttataaatg 660
gttacatatt ttaggcttat atacataaca aaacttctaa ctgaatttaa aagtgatctt 720
gtgtaaaaac attattctag tgatattgat gtctaaattt aaaagagtga atacacaagt 780
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tctgttcatt aaaatagaat gtagtcag 1168

<210> 105
<211> 1175
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (24)
<223> n equals a,t,g, or c

<400> 105
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grattttatt argcaggatt caaggcctcc taaaaatgga tattcagata tttaaaaata 120
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aaaatgcctt cacatatacg agctcattta tttctccttc tcttctttct attcatctat 240
caaggaatat cttctataag ccaggcatca ggcttgacac tgaagacaca aaatgaaaaa 300
gatatacaag tctctattct taaagagttc gtagtttaat gaagtgaccc aaaaagtaaa 360
cagttgcaat ataacatgca aaggagtgtg atgaaataca cctagagtac tatgaaaatg 420
gcatagaggg accaagcctg taatgaagtc agagaaagta aaagaggtga agcckgagct 480
aagttttaaa ggatgaacaa aaattgacca gacaaaggag ttggagaagt gggatggtac 540
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atagattgtg cacagagtgc acatggtaga gaggtgagag atgaggtagc actgttaggg 660
cagataggtg aattctcaca gtaaccctgt gwtgtacmtt atcatcctcc tctccattat 720
gtaggggaga acacaaaagc ccaaagagat taagtaactt tccagaattt tgatttcaaa 780
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tcccagcact ttggtaggcc aaggtgggcg gatcacctga ggtcaggatt tcgagaccag 960
cctggccaat atggtgaaac cccatctcta ctaacataca aaaattagct gggcatggtg 1020
gcacatgcct gtaatcctgg ctacttggga agctgaggca ggagaatctc ttgaacccag 1080
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aagattccgt ctcaaaaaaa aaaaaaaaaa ctcga 1175

<210> 106

<211> 1021
<212> DNA
<213> Homo sapiens

<400> 106
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ggatgtgcat ttaccaatca gaacacatgt tggctttact gcttgtatta gttttctgta     180
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tctcacaatt ctgggggcta gaagactgag ataaagatgt ctgcagggtt ggtttcttct     300
aaggactctc ttgttggctt gtagatggtt gttgtctccc tgtgtcttca cctgcacttc     360
cctctgtacc tgcccgtatc ttaatctctt cttataagga cagagtcata ttggattagg     420
gcctcaccct aatgacctcc ttttaactta attacctctt tagagactct gtcttcaaat     480
acaggcacat tctgaggtac tttaaggtta gaacttcaac atatgcattt ggaactgggg     540
cataactgag tccatgacac tattggagag ggttctggag ccataacaga tggaatgaat     600
gggccttgtt tggattctaa tttaaataaa ccaactatag aaaaacatgt tttaggcaat     660
cagatttttt gttatgggct aaatatttag aagatgttaa gaaatgttta ttaatttcat     720
taggtaaaat aatgttggtg tggttatgta gagtatgact tacgtgcaca gaacagaatg     780
ataaggtgtc caggatttgc tttaaaatat tctagattct tttaaaaggt gagaggaaat     840
gacacatgta tatctaaatt ttgatggttg ttgaagctgg ctggtaggta cctagtattt     900
cattatactt tttcctttgt gtgtttggaa atttttataa taagcaggaa aaataaaagt     960
aagaatatat gtattataga taatttgaaa tatgtagaat catgaaaaaa aaaaaaaaaa    1020
a                                                                    1021
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<210> 107
<211> 830
<212> DNA
<213> Homo sapiens

<400> 107
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cctctgactg taaaaagaag tagcagttcc gaaagcaaga gttccctatg aacacggaag     180
aagacattgg caactttga gtacaacaac tatatttaat agagtaattt aagaacatca      240
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ggatgccatt aaatagccta gaattagggg agtagtcgtt gaatagaaag gaggccacaa     360
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aatttttttg cttgcttgag gctggatatt gaagtggatc aggatacttg agtgactatc     540
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cttttttttt tttttgagg caaggtctca ctgttgttga ggctgaacct cctgggctca      660
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tgtgctcagt agtttgaggc tgtggtgagc taagatcaca ctgctgtgct cacttcagcc     780
tgggcaacac agtgaaaccc cgtctccatc tgtttaaaaa aaaaaaaaaa                830
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<210> 108
<211> 1301
<212> DNA
<213> Homo sapiens

<400> 108
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<210> 109
<211> 1932
<212> DNA
<213> Homo sapiens

<400> 109
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<210> 110
<211> 1534
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (1212)
<223> n equals a,t,g, or c

<400> 110
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<210> 111
<211> 2871
<212> DNA
<213> Homo sapiens

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<222> (1234)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (1259)
<223> n equals a,t,g, or c

<220>
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<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (1912)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (1913)
<223> n equals a,t,g, or c

<220>
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<222> (1935)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (1947)
<223> n equals a,t,g, or c

<400> 111
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<210> 113
<211> 2214
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (289)
<223> n equals a,t,g, or c

<400> 113

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<210> 114
<211> 3300
<212> DNA
<213> Homo sapiens

<400> 114
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<210> 115
<211> 1286
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (1149)
<223> n equals a,t,g, or c

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aaaaaaaaaa aaaaaaaaaa aaaaaa 1286

<210> 116
<211> 2189
<212> DNA
<213> Homo sapiens

<400> 116
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tctggtgcac cacatcctgc tctatcagtg cagcaacaac tttaacgaca gcgttcctgg 780
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tctcttctct ttcttagaaa tatctgatgt tatatataca tggtcaataa aataaaactg     2100
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<210> 117
<211> 1763
<212> DNA
<213> Homo sapiens

<400> 117

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gggaaccgcg ctacaggccg tgctgctggc cgtgctgctg gtggggctgc gggccgcgac      180
gggtcgcctg ctgagtgggc agccagtctg ccggggaggg acacagaggc cttgttataa      240
agtcatttac ttccatgata cttctcgaag actgaacttt gaggaagcca aagaagcctg      300
caggaggggga tggaggccag ctagtcagca tcgagttctg aagatgaaca gaaactgata     360
gaaaakttca ttgaaaacct cttgccatct gatggtgayt tctggawtgg gctcaggagg      420
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gcatatcaca atttaggaac tggtatgtgg atgagccgtc ctgcggcagc gaggtctgcg      540
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cagcagttcc ttctagagaa gctgaaggtg aggaaacaga gctgacaaca cctgtactto      720
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agacagaaaa tccagaatct tttcaaagcc cacatatggt agcacaggtt ggcctgtgca     1680
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tcggcaattc tcatatctgt ttttttcaaa gaataaaatc aaataaagag caggaaaaaa 1740
aaaaaaaaaa aaaaaaactc gag 1763

<210> 118
<211> 1375
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (18)
<223> n equals a,t,g, or c

<400> 118
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cggcgctgcc gsgggggctt cctggagcca gttytccccc cacgacctga ccgtgtcgct 180
atagtgacgg gagggacaga tggcattggc tattctacag cgaacatctg gcgagacttg 240
gcatgcatgt tatcatagct ggaaataatg acagcaaagc caaacaagtt gtaagcaaaa 300
taaaagaaga aaccttgaac gacaaagtgg aattttttata ctgtgacttg gcttccatga 360
cttccatccg gcagtttgtg cagaagttca agatgaagaa gattcctctc catgtcctga 420
tcaacaatgc tggggtgatg atggtccctc agaggaaaac cagagatgga ttcgaagaac 480
atttcggcct gaactaccta gggcacttcc tgctgaccaa ccttctcttg gatacgctga 540
aagagtctgg gtcccctggc cacagtgcga gggtggtcac cgtctcctct gccacccatt 600
acgtcgctga gctgaacatg gatgaccttc agagcagtgc ctgctactca ccccacgcag 660
cctacgccca gagcaagctg gcccttgtcc tgttcaccta ccacctccag cggctgctgg 720
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acaaccagaa actgcagcag cagctgtggt ctaagagttg tgagatgact ggggtccttg 1020
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gccaatagct tgtgggtctg tgaagactgc ggtgtttgag tttctcacac ccacctgccc 1140
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tccaaagtgc ccagttgtca caggtgccat aaataattac attttccaac ataaaaaaaa 1320
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaagggcg gccgc 1375

<210> 119
<211> 1022
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (937)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (990)
<223> n equals a,t,g, or c

<400> 119
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gccccggct ctacaaaatc taccgggaga gggactctga aagggccccg gccagcgtcc 120
ctgagacgcc aacggcagtc actgcccccc attccagctc ctgggatacg tactatcagc 180

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cccgtgccct ggagaaacat gctgacagca tcctggcact ggcttcagta ttctggtcca    240
tctcttatta ctcctctccc ttcgccttct tctacttgta caggaaaggt tacttgagtt    300
tgtccaaagt ggtgccgttt tctcactatg ctgggacatt gctgctactt ctggcaggtg    360
tggcctgctc cgaggcattg gccgctggac caacccccag taccggcagt tcatcaccat    420
cttggaagca acacatcgga accagtcttc agaaaacaag aggcagcttg ccaactacaa    480
ctttgacttc cggagctggc cagtcgactt ccactgggaa gaacccagca gccggaagga    540
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gaaggccctc atgcctgtgc tgctgcaggg ccaggcccga ctggtggaag agtgtaatgg    780
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gcgggggaca gctgagcccc aggacagaag ctggtgatct gctgtgargg gaatgctggg    900
ttttatgarg tgggctgcgt ctccamgccc ctggaanctg gatattcatc ckgggtggaa    960
tcatccagct ttgctggaac acaggggtn ccattcccgc aaaatgaagg ctaatgccat    1020
gg                                                                 1022
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<210> 120
<211> 2311
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (654)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (2293)
<223> n equals a,t,g, or c

<400> 120

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agaggaggtg cgctgccgcc tcctccttcc agcactcatc gagtctggga cgcgagcttc    180
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tgttcccgga gtacatcctg gatccggagc cgcaacccac ccgcgaaaag cagctgcagg    300
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gacagcaaaa cctacgggcc aggtcccggg agcacccggt cgtggggcac ccggacccgg    420
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ccggagtgcc cggctacctg ccccgagaga agttcctccg cacggcggag gcagacggcg    540
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gcccctccct ggtgctctac atggtggacc tgctggacct gcccgacgcc ctgctgcccg    720
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gccacaggac ggggagaatc cgaatccgcc gaactggtcc cgcacagtgg tcagggacgt    960
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gttttatgac accoctggaa ttacaaaaga aaattgtatt ttaaatcttc taacagaaaa    1560
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<210> 121
<211> 1286
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (1284)
<223> n equals a,t,g, or c

<400> 121

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gccgggagcc atgcgacccc agggccccgc cgcctccccg cagcggctcc gcggcctcct     180
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aaaaaaaaaa aaaaaaaaaa aaanaa                                         1286
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<210> 122
<211> 1380
<212> DNA
<213> Homo sapiens

<400> 122

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gggcccgccc agggcgccgc gcacacggcc ttgggggttc tgcgggcctt cgggtgcgcg     120
tctcgcctct agccatgggg tccgcagcgt tggagatcct gggcctggtg ctgtgcctgg     180
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<210> 123
<211> 3793
<212> DNA
<213> Homo sapiens

<220>
<221> SITE
<222> (1102)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (1132)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (1199)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (1228)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (1229)
<223> n equals a,t,g, or c

<220>
<221> SITE
<222> (1231)
<223> n equals a,t,g, or c

<220>
<221> SITE

<222> (3176)
<223> n equals a,t,g, or c

<400> 123
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gccccactgt tgatggggta agaggatcct gtactgagaa gttgaccaga gagggtctca 180
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tttacaaata acatttata tgtctcattt actgtgcttt ctccccatcc catttcgtat   3480
cttttccttt gctttgctag atttgtcaat tttctctctc tttctgtctc tctctctttc   3540
aatatctcta ataatttgaa agtaattcat cataactaaa tatctattgg ggttatgctt   3600
cacttacaaa cttctgaaaa cggctttact gagatataat tgatatattt aagtgtacag   3660
tttgttaaat tttgcacata tttaaaatgt ggactttggt aaatgttgac atagtttac   3720
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<210> 124
<211> 370
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (370)
<223> Xaa equals stop translation

<400> 124

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Met Leu Gly Ala Phe Val Trp Pro Ser Leu Leu Leu Leu Ala Ala Ala
 1               5                  10                  15

Cys Ile Cys Leu Leu Thr Phe Ile Asn Cys Ala Tyr Val Lys Trp Gly
            20                  25                  30

Thr Leu Val Gln Asp Ile Phe Thr Tyr Ala Lys Val Leu Ala Leu Ile
        35                  40                  45

Ala Val Ile Val Ala Gly Ile Val Arg Leu Gly Gln Gly Ala Ser Thr
    50                  55                  60

His Phe Glu Asn Ser Phe Glu Gly Ser Ser Phe Ala Val Gly Asp Ile
65                  70                  75                  80

Ala Leu Ala Leu Tyr Ser Ala Leu Phe Ser Tyr Ser Gly Trp Asp Thr
                85                  90                  95

Leu Asn Tyr Val Thr Glu Glu Ile Lys Asn Pro Glu Arg Asn Leu Pro
            100                 105                 110

Leu Ser Ile Gly Ile Ser Met Pro Ile Val Thr Ile Ile Tyr Ile Leu
        115                 120                 125

Thr Asn Val Ala Tyr Tyr Thr Val Leu Asp Met Arg Asp Ile Leu Ala
    130                 135                 140

Ser Asp Ala Val Ala Val Thr Phe Ala Asp Gln Ile Phe Gly Ile Phe
145                 150                 155                 160

Asn Trp Ile Ile Pro Leu Ser Val Ala Leu Ser Cys Phe Gly Gly Leu
                165                 170                 175

Asn Ala Ser Ile Val Ala Ala Ser Arg Leu Phe Phe Val Gly Ser Arg
            180                 185                 190

Glu Gly His Leu Pro Asp Ala Ile Cys Met Ile His Val Glu Arg Phe
```

195 200 205

Thr Pro Val Pro Ser Leu Leu Phe Asn Gly Ile Met Ala Leu Ile Tyr
210 215 220

Leu Cys Val Glu Asp Ile Phe Gln Leu Ile Asn Tyr Tyr Ser Phe Ser
225 230 235 240

Tyr Trp Phe Phe Val Gly Leu Ser Ile Val Gly Gln Leu Tyr Leu Arg
245 250 255

Trp Lys Glu Pro Asp Arg Pro Arg Pro Leu Lys Leu Ser Val Phe Phe
260 265 270

Pro Ile Val Phe Cys Leu Cys Thr Ile Phe Leu Val Ala Val Pro Leu
275 280 285

Tyr Ser Asp Thr Ile Asn Ser Leu Ile Gly Ile Ala Ile Ala Leu Ser
290 295 300

Gly Leu Pro Phe Tyr Phe Leu Ile Ile Arg Val Pro Glu His Lys Arg
305 310 315 320

Pro Leu Tyr Leu Arg Arg Ser Trp Gly Leu Pro Gln Gly Thr Ser Arg
325 330 335

Ser Cys Val Cys Gln Leu Leu Gln Lys Trp Ile Trp Lys Met Glu Glu
340 345 350

Arg Cys Pro Ser Asn Gly Ile Pro Ser Leu Thr Lys His His Leu Glu
355 360 365

Ser Xaa
370

<210> 125
<211> 86
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (86)
<223> Xaa equals stop translation

<400> 125
Met Gly Phe Trp Cys Gly Cys Pro Phe Cys Leu Leu Val Val Leu Leu
1 5 10 15

Thr Asp Arg Thr Leu Ser Cys Arg Ser Val Gly Val Pro Cys Asn Val
20 25 30

Arg Cys Gln Cys Ala Pro Ala Gly Gly Cys Leu Pro Val Arg Leu Leu
35 40 45

Ala Gly Gln Gly Ser Gly Thr His Leu Arg Arg Gln Ser Ala Arg Ser
50 55 60

Gln Ile Ser Ser Cys Met Leu Gly Glu Pro Leu Leu Ser Ser Lys Leu
65 70 75 80

Ser Asp Arg Asp Ile Xaa
85

<210> 126
<211> 44
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (44)
<223> Xaa equals stop translation

<400> 126
Met Tyr Thr Lys Thr His Lys Phe Lys Phe Tyr Asn Phe Leu Ser Leu
1 5 10 15

Trp Ile Trp Lys Ile Phe Phe Leu Leu Phe Phe Ile Leu Ile Val Ala
20 25 30

Leu Ala Phe Pro Ile Pro Cys Leu Ser Ile Phe Xaa
35 40

<210> 127
<211> 319
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (264)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (303)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 127
Met Asn Thr Asp His Leu Arg Leu Thr Val Pro Asn Gly Ile Gly Ala
1 5 10 15

Leu Lys Leu Arg Glu Met Glu His Tyr Phe Ser Gln Gly Leu Ser Val
20 25 30

Gln Leu Phe Asn Asp Gly Ser Lys Gly Lys Leu Asn His Leu Cys Gly
35 40 45

Ala Asp Phe Val Lys Ser His Gln Lys Pro Pro Gln Gly Met Glu Ile
50 55 60

Lys Ser Asn Glu Arg Cys Cys Ser Phe Asp Gly Asp Ala Asp Arg Ile
65 70 75 80

Val Tyr Tyr Tyr His Asp Ala Asp Gly His Phe His Leu Ile Asp Gly
85 90 95

Asp Lys Ile Ala Thr Leu Ile Ser Ser Phe Leu Lys Glu Leu Leu Val
100 105 110

Glu Ile Gly Glu Ser Leu Asn Ile Gly Val Val Gln Thr Ala Tyr Ala
115 120 125

Asn Gly Ser Ser Thr Arg Tyr Leu Glu Glu Val Met Lys Val Pro Val
130 135 140

Tyr Cys Thr Lys Thr Gly Val Lys His Leu His His Lys Ala Gln Glu
145 150 155 160

Phe Asp Ile Gly Val Tyr Phe Glu Ala Asn Gly His Gly Thr Ala Leu
165 170 175

Phe Ser Thr Ala Val Glu Met Lys Ile Lys Gln Ser Ala Glu Gln Leu
180 185 190

Glu Asp Lys Lys Arg Lys Ala Ala Lys Met Leu Glu Asn Ile Ile Asp
195 200 205

Leu Phe Asn Gln Ala Ala Gly Asp Ala Ile Ser Asp Met Leu Val Ile
210 215 220

Glu Ala Ile Leu Ala Leu Lys Gly Leu Thr Val Gln Gln Trp Asp Ala
225 230 235 240

Leu Tyr Thr Asp Leu Pro Asn Arg Gln Leu Lys Val Gln Val Ala Asp
245 250 255

Arg Arg Val Ile Ser Thr Thr Xaa Ala Glu Arg Gln Ala Val Thr Pro
260 265 270

Pro Gly Leu Gln Glu Ala Ile Asn Asp Leu Val Lys Lys Tyr Lys Leu
275 280 285

Ser Arg Ala Phe Val Arg Pro Ser Gly Thr Glu Asp Val Val Xaa Ser
290 295 300

Ile Cys Arg Ser Arg Leu Thr Arg Lys Cys Arg Ser Pro Cys Thr
305 310 315

<210> 128
<211> 46
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (46)
<223> Xaa equals stop translation

<400> 128
Met Asp Met Val Cys Phe Cys Ile Tyr Leu Gly Leu Leu Lys Phe Ile
1 5 10 15

Ser Ala Ile Phe Cys Ser Phe Ser Glu Glu Val Leu Tyr Ile Ser Phe
20 25 30

Val Lys Cys Ile Pro Lys Tyr Phe Val Glu Met Leu Leu Xaa
35 40 45

<210> 129
<211> 709
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (189)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (275)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (414)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (438)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (641)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (643)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (696)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (697)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 129
Met Ala Gly Leu Asn Cys Gly Val Ser Ile Ala Leu Leu Gly Val Leu
1 5 10 15

Leu Leu Gly Ala Ala Arg Leu Pro Arg Gly Ala Glu Ala Phe Glu Ile
20 25 30

Ala Leu Pro Arg Glu Ser Asn Ile Thr Val Leu Ile Lys Leu Gly Thr
35 40 45

Pro Thr Leu Leu Ala Lys Pro Cys Tyr Ile Val Ile Ser Lys Arg His
50 55 60

Ile Thr Met Leu Ser Ile Lys Ser Gly Glu Arg Ile Val Phe Thr Phe
65 70 75 80

Ser Cys Gln Ser Pro Glu Asn His Phe Val Ile Glu Ile Gln Lys Asn
85 90 95

Ile Asp Cys Met Ser Gly Pro Cys Pro Phe Gly Glu Val Gln Leu Gln
100 105 110

Pro Ser Thr Ser Leu Leu Pro Thr Leu Asn Arg Thr Phe Ile Trp Asp
115 120 125

Val Lys Ala His Lys Ser Ile Gly Leu Glu Leu Gln Phe Ser Ile Pro
130 135 140

Arg Leu Arg Gln Ile Gly Pro Gly Glu Ser Cys Pro Asp Gly Val Thr
145 150 155 160

His Ser Ile Ser Gly Arg Ile Asp Ala Thr Val Val Arg Ile Gly Thr
165 170 175

Phe Cys Ser Asn Gly Thr Val Ser Arg Ile Lys Met Xaa Glu Gly Val
180 185 190

Lys Met Ala Leu His Leu Pro Trp Phe His Pro Arg Asn Val Ser Gly
195 200 205

Phe Ser Ile Ala Asn Arg Ser Ser Ile Lys Arg Leu Cys Ile Ile Glu
210 215 220

Ser Val Phe Glu Gly Glu Gly Ser Ala Thr Leu Met Ser Ala Asn Tyr
225 230 235 240

Pro Glu Gly Phe Pro Glu Asp Glu Leu Met Thr Trp Gln Phe Val Val
245 250 255

Pro Ala His Leu Arg Ala Ser Val Ser Phe Leu Asn Phe Asn Leu Ser
260 265 270

Asn Cys Xaa Arg Lys Glu Glu Arg Val Glu Tyr Tyr Ile Pro Gly Ser
275 280 285

Thr Thr Asn Pro Glu Val Phe Lys Leu Glu Asp Lys Gln Pro Gly Asn
290 295 300

Met Ala Gly Asn Phe Asn Leu Ser Leu Gln Gly Cys Asp Gln Asp Ala
305 310 315 320

Gln Ser Pro Gly Ile Leu Arg Leu Gln Phe Gln Val Leu Val Gln His
325 330 335

Pro Gln Asn Glu Ser Asn Lys Ile Tyr Val Val Asp Leu Ser Asn Glu

340 345 350

Arg Ala Met Ser Leu Thr Ile Glu Pro Arg Pro Val Lys Gln Ser Arg
355 360 365

Lys Phe Val Pro Gly Cys Phe Val Cys Leu Glu Ser Arg Thr Cys Ser
370 375 380

Ser Asn Leu Thr Leu Thr Ser Gly Ser Lys His Lys Ile Ser Phe Leu
385 390 395 400

Cys Asp Asp Leu Thr Arg Leu Trp Met Asn Val Glu Lys Xaa Ile Ser
405 410 415

Cys Thr Asp His Arg Tyr Cys Gln Arg Lys Ser Tyr Ser Leu Gln Val
420 425 430

Pro Ser Asp Ile Leu Xaa Leu Pro Val Glu Leu His Asp Phe Ser Trp
435 440 445

Lys Leu Leu Val Pro Lys Asp Arg Leu Ser Leu Val Leu Val Pro Ala
450 455 460

Gln Lys Leu Gln Gln His Thr His Glu Lys Pro Cys Asn Thr Ser Phe
465 470 475 480

Ser Tyr Leu Val Ala Ser Ala Ile Pro Ser Gln Asp Leu Tyr Phe Gly
485 490 495

Ser Phe Cys Pro Gly Gly Ser Ile Lys Gln Ile Gln Val Lys Gln Asn
500 505 510

Ile Ser Val Thr Leu Arg Thr Phe Ala Pro Ser Phe Arg Gln Glu Ala
515 520 525

Ser Arg Gln Gly Leu Thr Val Ser Phe Ile Pro Tyr Phe Lys Glu Glu
530 535 540

Gly Val Phe Thr Val Thr Pro Asp Thr Lys Ser Lys Val Tyr Leu Arg
545 550 555 560

Thr Pro Asn Trp Asp Arg Gly Leu Pro Ser Leu Thr Ser Val Ser Trp
565 570 575

Asn Ile Ser Val Pro Arg Asp Gln Val Ala Cys Leu Thr Phe Phe Lys
580 585 590

Glu Arg Ser Gly Val Val Cys Gln Thr Gly Arg Ala Phe Met Ile Ile
595 600 605

Gln Glu Gln Arg Thr Arg Ala Glu Glu Ile Phe Ser Leu Asp Glu Asp
610 615 620

Val Leu Pro Lys Pro Ser Phe His His His Ser Phe Trp Val Asn Ile
625 630 635 640

Xaa Asn Xaa Ser Pro Thr Ser Gly Lys Gln Leu Asp Leu Leu Phe Ser
645 650 655

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Val Thr Leu Thr Pro Arg Thr Val Asp Leu Thr Val Ile Leu Ile Ala
            660                     665                 670

Ala Val Gly Gly Gly Val Leu Leu Leu Ser Ala Leu Gly Leu Ile Ile
        675                     680                 685

Cys Cys Val Lys Lys Lys Lys Xaa Xaa Thr Arg Gly Pro Ala Val Gly
    690                     695                 700

Ile Tyr Asn Gly Asn
705


<210> 130
<211> 415
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (415)
<223> Xaa equals stop translation

<400> 130
Met Thr Lys Ala Arg Leu Phe Arg Leu Trp Leu Val Leu Gly Ser Val
  1               5                  10                  15

Phe Met Ile Leu Leu Ile Ile Val Tyr Trp Asp Ser Ala Gly Ala Ala
             20                  25                  30

His Phe Tyr Leu His Thr Ser Phe Ser Arg Pro His Thr Gly Pro Pro
         35                  40                  45

Leu Pro Thr Pro Gly Pro Asp Arg Asp Arg Glu Leu Thr Ala Asp Ser
     50                  55                  60

Asp Val Asp Glu Phe Leu Asp Lys Phe Leu Ser Ala Gly Val Lys Gln
 65                  70                  75                  80

Ser Asp Leu Pro Arg Lys Glu Thr Glu Gln Pro Pro Ala Pro Gly Ser
                 85                  90                  95

Met Glu Glu Asn Val Arg Gly Tyr Asp Trp Ser Pro Arg Asp Ala Arg
            100                 105                 110

Arg Ser Pro Asp Gln Gly Arg Gln Gln Ala Glu Arg Arg Ser Val Leu
        115                 120                 125

Arg Gly Phe Cys Ala Asn Ser Ser Leu Ala Phe Pro Thr Lys Glu Arg
    130                 135                 140

Ala Phe Asp Asp Ile Pro Asn Ser Glu Leu Ser His Leu Ile Val Asp
145                 150                 155                 160

Asp Arg His Gly Ala Ile Tyr Cys Tyr Val Pro Lys Val Ala Cys Thr
                165                 170                 175

Asn Trp Lys Arg Val Met Ile Val Leu Ser Gly Ser Leu Leu His Arg
            180                 185                 190
```

Gly Ala Pro Tyr Arg Asp Pro Leu Arg Ile Pro Arg Glu His Val His
195 200 205

Asn Ala Ser Ala His Leu Thr Phe Asn Lys Phe Trp Arg Arg Tyr Gly
210 215 220

Lys Leu Ser Arg His Leu Met Lys Val Lys Leu Lys Lys Tyr Thr Lys
225 230 235 240

Phe Leu Phe Val Arg Asp Pro Phe Val Arg Leu Ile Ser Ala Phe Arg
245 250 255

Ser Lys Phe Glu Leu Glu Asn Glu Glu Phe Tyr Arg Lys Phe Ala Val
260 265 270

Pro Met Leu Arg Leu Tyr Ala Asn His Thr Ser Leu Pro Ala Ser Ala
275 280 285

Arg Glu Ala Phe Arg Ala Gly Leu Lys Val Ser Phe Ala Asn Phe Ile
290 295 300

Gln Tyr Leu Leu Asp Pro His Thr Glu Lys Leu Ala Pro Phe Asn Glu
305 310 315 320

His Trp Arg Gln Val Tyr Arg Leu Cys His Pro Cys Gln Ile Asp Tyr
325 330 335

Asp Phe Val Gly Lys Leu Glu Thr Leu Asp Glu Asp Ala Ala Gln Leu
340 345 350

Leu Gln Leu Leu Gln Val Asp Arg Gln Leu Arg Phe Pro Pro Ser Tyr
355 360 365

Arg Asn Arg Thr Ala Ser Ser Trp Glu Glu Asp Trp Phe Ala Lys Ile
370 375 380

Pro Leu Ala Trp Arg Gln Gln Leu Tyr Lys Leu Tyr Glu Ala Asp Phe
385 390 395 400

Val Leu Phe Gly Tyr Pro Lys Pro Glu Asn Leu Leu Arg Asp Xaa
405 410 415

<210> 131
<211> 242
<212> PRT
<213> Homo sapiens

<400> 131
Met Gln Leu Gly Ser Val Leu Leu Thr Arg Cys Pro Phe Trp Gly Cys
1 5 10 15

Phe Ser Gln Leu Met Leu Tyr Ala Glu Arg Ala Glu Ala Arg Arg Lys
20 25 30

Pro Asp Ile Pro Val Pro Tyr Leu Tyr Phe Asp Met Gly Ala Ala Val
35 40 45

Leu Cys Ala Ser Phe Met Ser Phe Gly Val Lys Arg Arg Trp Phe Ala
50 55 60

Leu Gly Ala Ala Leu Gln Leu Ala Ile Ser Thr Tyr Ala Ala Tyr Ile
65 70 75 80

Gly Gly Tyr Val His Tyr Gly Asp Trp Leu Lys Val Arg Met Tyr Ser
85 90 95

Arg Thr Val Ala Ile Ile Gly Gly Phe Leu Val Leu Ala Ser Gly Ala
100 105 110

Gly Glu Leu Tyr Arg Arg Lys Pro Arg Ser Arg Ser Leu Gln Ser Thr
115 120 125

Gly Gln Val Phe Leu Gly Ile Tyr Leu Ile Cys Val Ala Tyr Ser Leu
130 135 140

Gln His Ser Lys Glu Asp Arg Leu Ala Tyr Leu Asn His Leu Pro Gly
145 150 155 160

Gly Glu Leu Met Ile Gln Leu Phe Phe Val Leu Tyr Gly Ile Leu Ala
165 170 175

Leu Ala Phe Leu Ser Gly Tyr Tyr Val Thr Leu Ala Ala Gln Ile Leu
180 185 190

Ala Val Leu Leu Pro Pro Val Met Leu Leu Ile Asp Gly Asn Val Ala
195 200 205

Tyr Trp His Asn Thr Arg Arg Val Glu Phe Trp Asn Gln Met Lys Leu
210 215 220

Leu Gly Glu Ser Val Gly Ile Phe Gly Thr Ala Val Ile Leu Ala Thr
225 230 235 240

Asp Gly

<210> 132
<211> 313
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (313)
<223> Xaa equals stop translation

<400> 132
Met Glu Ser Leu Tyr Asp Leu Trp Glu Phe Tyr Leu Pro Tyr Leu Tyr
1 5 10 15

Ser Cys Ile Ser Leu Met Gly Cys Leu Leu Leu Leu Leu Cys Thr Pro
20 25 30

Val Gly Leu Ser Arg Met Phe Thr Val Met Gly His Leu Leu Val Lys
35 40 45

```
Pro Thr Ile Leu Glu Asp Leu Asp Glu Gln Ile Tyr Ile Ile Thr Leu
     50                  55                  60

Glu Glu Glu Ala Leu Gln Arg Arg Leu Asn Gly Leu Ser Ser Ser Val
 65                  70                  75                  80

Glu Tyr Asn Ile Met Glu Leu Glu Gln Glu Leu Glu Asn Val Lys Thr
                 85                  90                  95

Leu Lys Thr Lys Leu Glu Arg Arg Lys Lys Ala Ser Ala Trp Glu Arg
            100                 105                 110

Asn Leu Val Tyr Pro Ala Val Met Val Leu Leu Leu Ile Glu Thr Ser
        115                 120                 125

Ile Ser Val Leu Leu Val Ala Cys Asn Ile Leu Cys Leu Leu Val Asp
    130                 135                 140

Glu Thr Ala Met Pro Lys Gly Thr Arg Gly Pro Gly Ile Gly Asn Ala
145                 150                 155                 160

Ser Leu Ser Thr Phe Gly Phe Val Gly Ala Ala Leu Glu Ile Ile Leu
                165                 170                 175

Ile Phe Tyr Leu Met Val Ser Ser Val Val Gly Phe Tyr Ser Leu Arg
            180                 185                 190

Phe Phe Gly Asn Phe Thr Pro Lys Lys Asp Asp Thr Thr Met Thr Lys
        195                 200                 205

Ile Ile Gly Asn Cys Val Ser Ile Leu Val Leu Ser Ser Ala Leu Pro
    210                 215                 220

Val Met Ser Arg Thr Leu Gly Ile Thr Arg Phe Asp Leu Leu Gly Asp
225                 230                 235                 240

Phe Gly Arg Phe Asn Trp Leu Gly Asn Phe Tyr Ile Val Leu Ser Tyr
                245                 250                 255

Asn Leu Leu Phe Ala Ile Val Thr Thr Leu Cys Leu Val Arg Lys Phe
            260                 265                 270

Thr Ser Ala Val Arg Glu Glu Leu Phe Lys Ala Leu Gly Leu His Lys
        275                 280                 285

Leu His Leu Pro Asn Thr Ser Arg Asp Ser Glu Thr Ala Lys Pro Ser
    290                 295                 300

Val Asn Gly His Gln Lys Ala Leu Xaa
305                 310
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<210> 133
<211> 183
<212> PRT
<213> Homo sapiens

<220>

<221> SITE
<222> (183)
<223> Xaa equals stop translation

<400> 133
Met Met Val Cys Ser Ile Met Met Tyr Phe Leu Leu Gly Ile Thr Leu
1   5   10   15

Leu Arg Ser Tyr Met Gln Ser Val Trp Thr Glu Glu Ser Gln Cys Thr
            20   25   30

Leu Leu Asn Ala Ser Ile Thr Glu Thr Phe Asn Cys Ser Phe Ser Cys
        35   40   45

Gly Pro Asp Cys Trp Lys Leu Ser Gln Tyr Pro Cys Leu Gln Val Tyr
    50   55   60

Val Asn Leu Thr Ser Ser Gly Glu Lys Leu Leu Leu Tyr His Thr Glu
65   70   75   80

Glu Thr Ile Lys Ile Asn Gln Lys Cys Ser Tyr Ile Pro Lys Cys Gly
                85   90   95

Lys Asn Phe Glu Glu Ser Met Ser Leu Val Asn Val Val Met Glu Asn
            100   105   110

Phe Arg Lys Tyr Gln His Phe Ser Cys Tyr Ser Asp Pro Glu Gly Asn
        115   120   125

Gln Lys Ser Val Ile Leu Thr Lys Leu Tyr Ser Ser Asn Val Leu Phe
    130   135   140

His Ser Leu Phe Trp Pro Thr Cys Met Met Ala Gly Gly Val Ala Ile
145   150   155   160

Val Ala Met Val Lys Leu Thr Gln Tyr Leu Ser Leu Leu Cys Glu Arg
                165   170   175

Ile Gln Arg Ile Asn Arg Xaa
            180

<210> 134
<211> 147
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (147)
<223> Xaa equals stop translation

<400> 134
Met Trp Lys Leu Trp Arg Ala Glu Glu Gly Ala Ala Ala Leu Gly Gly
1   5   10   15

Ala Leu Phe Leu Leu Leu Phe Ala Leu Gly Val Arg Gln Leu Leu Lys
            20   25   30

Gln Arg Arg Pro Met Gly Phe Pro Pro Gly Pro Pro Gly Leu Pro Phe
35 40 45

Ile Gly Asn Ile Tyr Ser Leu Ala Ala Ser Ser Glu Leu Pro His Val
50 55 60

Tyr Met Arg Lys Gln Ser Gln Val Tyr Gly Glu Val Gln Pro Arg Arg
65 70 75 80

Ala Pro Gly Arg Glu Gly Arg Gln Ala Gly Pro Gly Trp Pro Gly Pro
85 90 95

Ser Trp Leu Asp Leu Trp Pro Pro Leu Gly Arg Leu Val Gly Thr Ser
100 105 110

Pro Cys Ala Gly Cys Pro Leu Arg Asp Thr Arg Phe Pro Gly Leu Glu
115 120 125

Gly Arg Ser Pro Arg Arg Arg Ala Pro Leu Gln Gly Glu Pro Arg Pro
130 135 140

Cys Arg Xaa
145

<210> 135
<211> 122
<212> PRT
<213> Homo sapiens

<400> 135
Met Arg Val Arg Ile Gly Leu Thr Leu Leu Leu Cys Ala Val Leu Leu
1 5 10 15

Ser Leu Ala Ser Ala Ser Ser Asp Glu Glu Gly Ser Gln Asp Glu Ser
20 25 30

Leu Asp Ser Lys Thr Thr Leu Thr Ser Asp Glu Ser Val Lys Asp His
35 40 45

Thr Thr Ala Gly Arg Val Val Ala Gly Gln Ile Phe Leu Asp Ser Glu
50 55 60

Glu Ser Glu Leu Glu Ser Ser Ile Gln Glu Glu Glu Asp Ser Leu Lys
65 70 75 80

Ser Gln Glu Gly Glu Ser Val Thr Glu Asp Ile Ser Phe Leu Glu Ser
85 90 95

Pro Asn Pro Glu Asn Lys Asp Tyr Glu Glu Pro Lys Lys Val Arg Lys
100 105 110

Pro Gly Ser Leu Asp Ile Phe Leu Ala Phe
115 120

<210> 136
<211> 112
<212> PRT

<213> Homo sapiens

<400> 136
Met Ala Arg Gly Ser Leu Arg Arg Leu Leu Arg Leu Leu Val Leu Gly
1 5 10 15

Leu Trp Leu Ala Leu Leu Arg Ser Val Ala Gly Glu Gln Ala Pro Gly
20 25 30

Thr Ala Pro Cys Ser Arg Gly Ser Ser Trp Ser Ala Asp Leu Asp Lys
35 40 45

Cys Met Asp Cys Ser Thr Ser Cys Pro Leu Pro Ala Ala Leu Ala His
50 55 60

Pro Trp Gly Arg Ser Glu Pro Asp Leu Arg Ala Gly Ala Ala Phe Trp
65 70 75 80

Leu Phe Gly Leu Glu Thr Met Pro Gln Arg Glu Lys Phe Thr Thr Pro
85 90 95

Ile Glu Glu Thr Gly Gly Glu Gly Cys Pro Ala Val Ala Leu Ile Gln
100 105 110

<210> 137
<211> 140
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (140)
<223> Xaa equals stop translation

<400> 137
Met Leu Leu Gly Pro Val Pro Ile Leu His Ile Lys Ser Gln Leu Trp
1 5 10 15

Leu Leu Val Leu Ile Leu Val Val Ser Gly Leu Ser Ala Gly Met Ser
20 25 30

Ile Ile Pro Thr Phe Pro Glu Ile Leu Ser Cys Ala His Glu Asn Gly
35 40 45

Phe Glu Glu Gly Leu Ser Thr Leu Gly Leu Val Ser Gly Leu Phe Ser
50 55 60

Ala Met Trp Ser Ile Gly Ala Phe Met Gly Pro Thr Leu Gly Gly Phe
65 70 75 80

Leu Tyr Glu Lys Ile Gly Phe Glu Trp Ala Ala Ala Ile Gln Gly Leu
85 90 95

Trp Ala Leu Ile Ser Gly Leu Ala Met Gly Leu Phe Tyr Leu Leu Glu
100 105 110

```
Tyr Ser Arg Arg Lys Arg Ser Lys Ser Gln Asn Ile Leu Ser Thr Glu
        115                 120                 125

Glu Glu Arg Thr Thr Leu Leu Pro Asn Glu Thr Xaa
    130                 135                 140


<210> 138
<211> 404
<212> PRT
<213> Homo sapiens

<400> 138
Met Arg Leu Gln Asp Val Tyr Met Leu Asn Val Lys Gly Leu Ala Arg
  1               5                  10                  15

Gly Val Phe Gln Arg Val Thr Gly Ser Ala Ile Thr Asp Leu Tyr Ser
             20                  25                  30

Pro Lys Arg Leu Phe Ser Leu Thr Gly Asp Asp Cys Phe Gln Val Gly
         35                  40                  45

Lys Val Ala Tyr Asp Met Gly Asp Tyr Tyr His Ala Ile Pro Trp Leu
     50                  55                  60

Glu Glu Ala Val Ser Leu Phe Arg Gly Ser Tyr Gly Glu Trp Lys Thr
 65                  70                  75                  80

Glu Asp Glu Ala Ser Leu Glu Asp Ala Leu Asp His Leu Ala Phe Ala
                 85                  90                  95

Tyr Phe Arg Ala Gly Asn Val Ser Cys Ala Leu Ser Leu Ser Arg Glu
            100                 105                 110

Phe Leu Leu Tyr Ser Pro Asp Asn Lys Arg Met Ala Arg Asn Val Leu
        115                 120                 125

Lys Tyr Glu Arg Leu Leu Ala Glu Ser Pro Asn His Val Val Ala Glu
    130                 135                 140

Ala Val Ile Gln Arg Pro Asn Ile Pro His Leu Gln Thr Arg Asp Thr
145                 150                 155                 160

Tyr Glu Gly Leu Cys Gln Thr Leu Gly Ser Gln Pro Thr Leu Tyr Gln
                165                 170                 175

Ile Pro Ser Leu Tyr Cys Ser Tyr Glu Thr Asn Ser Asn Ala Tyr Leu
            180                 185                 190

Leu Leu Gln Pro Ile Arg Lys Glu Val Ile His Leu Glu Pro Tyr Ile
        195                 200                 205

Ala Leu Tyr His Asp Phe Val Ser Asp Ser Glu Ala Gln Lys Ile Arg
    210                 215                 220

Glu Leu Ala Glu Pro Trp Leu Gln Arg Ser Val Val Ala Ser Gly Glu
225                 230                 235                 240
```

Lys Gln Leu Gln Val Glu Tyr Arg Ile Ser Lys Ser Ala Trp Leu Lys
245 250 255

Asp Thr Val Asp Leu Lys Leu Val Thr Leu Asn His Arg Ile Ala Ala
260 265 270

Leu Thr Gly Leu Asp Val Arg Pro Pro Tyr Ala Glu Tyr Leu Gln Val
275 280 285

Val Asn Tyr Gly Ile Gly Gly His Tyr Glu Pro His Phe Asp His Ala
290 295 300

Thr Ser Pro Ser Ser Pro Leu Tyr Arg Met Lys Ser Gly Asn Arg Val
305 310 315 320

Ala Thr Phe Met Ile Tyr Leu Ser Ser Val Glu Ala Gly Gly Ala Thr
325 330 335

Ala Phe Ile Tyr Ala Asn Leu Ser Val Pro Val Val Arg Asn Ala Ala
340 345 350

Leu Phe Trp Trp Asn Leu His Arg Ser Gly Glu Gly Asp Ser Asp Thr
355 360 365

Leu His Ala Gly Cys Pro Val Leu Val Gly Asp Lys Trp Val Ala Asn
370 375 380

Lys Trp Ile His Glu Tyr Gly Gln Glu Phe Arg Arg Pro Cys Ser Ser
385 390 395 400

Ser Pro Glu Asp

<210> 139
<211> 96
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (96)
<223> Xaa equals stop translation

<400> 139
Met Lys Ala Pro His Thr Gly Val Leu His Leu Gly Ser Val Trp Val
1 5 10 15

Phe Leu Gly Pro Phe Leu Leu Gly Val Gly Tyr Thr Leu Thr Phe Asn
20 25 30

Pro Leu Ser Gly Cys Met Ser Thr Val Arg Trp Leu Asn Ser Asn Ile
35 40 45

Thr Ala Asn Arg Thr Leu Ser Arg Ser Val Cys His Val Thr Pro Leu
50 55 60

His Arg Ser Leu Ser Pro His Asp Gly Glu Tyr Leu Arg Gln Met Leu
65 70 75 80

```
Leu Asn Ser Ser Ser Arg Ala Gly Glu Ala Gly Ser Trp Gly Tyr Xaa
                85                  90                  95



<210> 140
<211> 240
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (240)
<223> Xaa equals stop translation

<400> 140
Met Gly Ser Cys Ala Arg Leu Leu Leu Leu Trp Gly Cys Thr Val Val
1               5                   10                  15

Ala Ala Gly Leu Ser Gly Val Ala Gly Val Ser Ser Arg Cys Glu Lys
            20                  25                  30

Ala Cys Asn Pro Arg Met Gly Asn Leu Ala Leu Gly Arg Lys Leu Trp
        35                  40                  45

Ala Asp Thr Thr Cys Gly Gln Asn Ala Thr Glu Leu Tyr Cys Phe Tyr
    50                  55                  60

Ser Glu Asn Thr Asp Leu Thr Cys Arg Gln Pro Lys Cys Asp Lys Cys
65                  70                  75                  80

Asn Ala Ala Tyr Pro His Leu Ala His Leu Pro Ser Ala Met Ala Asp
                85                  90                  95

Ser Ser Phe Arg Phe Pro Arg Thr Trp Trp Gln Ser Ala Glu Asp Val
            100                 105                 110

His Arg Glu Lys Ile Gln Leu Asp Leu Glu Ala Glu Phe Tyr Phe Thr
        115                 120                 125

His Leu Ile Val Met Phe Lys Ser Pro Arg Pro Ala Ala Met Val Leu
    130                 135                 140

Asp Arg Ser Gln Asp Phe Gly Lys Thr Trp Lys Pro Tyr Lys Tyr Phe
145                 150                 155                 160

Ala Thr Asn Cys Ser Ala Thr Phe Gly Leu Glu Asp Asp Val Val Lys
                165                 170                 175

Lys Gly Ala Ile Cys Thr Ser Lys Tyr Ser Ser Pro Phe Pro Cys Thr
            180                 185                 190

Gly Arg Lys Val Ile Phe Lys Ala Leu Ser Pro Pro Tyr Asp Thr Glu
        195                 200                 205

Asn Pro Tyr Ser Ala Lys Val Gln Glu Gln Leu Lys Ile Thr Asn Leu
```

```
    210                     215                     220

Pro Arg Ala Ala Ala Glu Thr Thr Val Leu Ser Leu Ser Glu Lys Xaa
225                 230                     235                 240



<210> 141
<211> 54
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (54)
<223> Xaa equals stop translation

<400> 141
Met Met Ile Ser Gly Leu Lys Leu Leu Val Leu Phe Leu Lys Phe Ala
  1               5                  10                  15

Pro Glu Asn Tyr Cys Leu Ser Thr Glu Thr Leu Gln Met Pro Asn Arg
             20                  25                  30

His Leu Arg Leu Ser Lys Ala Thr Cys Tyr Leu Met Lys Cys Leu Leu
         35                  40                  45

Pro Ser Tyr Phe Glu Xaa
     50


<210> 142
<211> 67
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (67)
<223> Xaa equals stop translation

<400> 142
Met Arg Ser Leu Ile Ser Ser His Pro Cys Gln His Leu Leu Leu Leu
  1               5                  10                  15

Leu Leu Leu Leu Phe Leu Ile Leu Ala Ile Leu Val Asp Val Lys Trp
             20                  25                  30

Tyr Leu Val Leu Phe Ile Cys Ile Ser Leu Met Thr Ser Asp Val Glu
         35                  40                  45

His Leu Phe Met Cys Leu Leu Ala Ile Arg Ile Ser Ser Trp Arg Asn
     50                  55                  60

Val Tyr Xaa
 65
```

<210> 143
<211> 108
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (48)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (55)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (58)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (67)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 143
```
Met Phe Tyr Lys Leu Thr Leu Ile Leu Cys Glu Leu Ser Val Ala Gly
 1               5                  10                  15

Val Thr Gln Ala Ala Ser Gln Arg Pro Leu Gln Arg Leu Pro Arg His
            20                  25                  30

Ile Cys Ser Gln Arg Asn Pro Pro Gly Arg Cys Leu Leu Lys Ala Xaa
        35                  40                  45

Leu Gln Thr Thr Trp Gly Xaa Pro Asp Xaa Gln Phe Pro Gly Cys Pro
    50                  55                  60

His Pro Xaa Arg Val Thr Leu Asn Ala Arg Gln Met Gly Asn Gly Lys
65                  70                  75                  80

Glu Lys Lys Ala Ala Asp Leu Lys Leu Lys Phe Pro Gln Lys Arg Phe
                85                  90                  95

Tyr Leu Ser Ala Phe Ser Glu Arg Ile Lys Ala Phe
            100                 105
```

<210> 144
<211> 84
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (84)
<223> Xaa equals stop translation

```
<400> 144
Met Ala Ser Val Gly Thr Thr Leu Val Ser Pro Leu Leu Cys Leu Leu
  1               5                  10                  15

Ile Pro Thr Arg Val Ser Asp Pro Trp Leu Gln Asn Thr Pro Leu His
             20                  25                  30

Pro Trp Lys Thr Ile Thr Ile Ile Asp Tyr Tyr Leu Ser Leu Gly Phe
         35                  40                  45

Leu Gly Trp Thr Gly Leu Ser Trp Val Val His Phe Gly Ala Ser Ala
     50                  55                  60

Val Met Gly Arg Gln Trp Leu Gly Ser Leu Gln Arg Leu Pro Cys Ile
 65                  70                  75                  80

Ser Gly Ser Xaa


<210> 145
<211> 166
<212> PRT
<213> Homo sapiens

<400> 145
Met Gly Ser Arg Phe Leu Leu Val Leu Leu Ser Gly Leu Thr Val Leu
  1               5                  10                  15

Leu Ala Leu Pro Gly Ser Glu Ala Lys Asn Ser Gly Ala Ser Cys Pro
             20                  25                  30

Pro Cys Pro Lys Tyr Ala Ser Cys His Asn Ser Thr His Cys Thr Cys
         35                  40                  45

Glu Asp Gly Phe Arg Ala Arg Ser Gly Arg Thr Tyr Phe His Asp Ser
     50                  55                  60

Ser Glu Lys Cys Glu Asp Ile Asn Glu Cys Glu Thr Gly Leu Ala Lys
 65                  70                  75                  80

Cys Lys Tyr Lys Ala Tyr Cys Arg Asn Lys Val Gly Gly Tyr Ile Cys
                 85                  90                  95

Ser Cys Leu Val Lys Tyr Thr Leu Phe Asn Phe Leu Ala Gly Ile Ile
            100                 105                 110

Asp Tyr Asp His Pro Asp Cys Tyr Glu Asn Asn Ser Gln Gly Thr Thr
        115                 120                 125

Gln Ser Asn Val Asp Ile Trp Val Ser Gly Val Lys Pro Gly Phe Gly
    130                 135                 140

Lys Gln Leu Val Arg Ile Thr Met Pro Phe Ser Tyr Pro Asn Ile Asn
145                 150                 155                 160

Met Ser Ser Cys Asp Phe
                165
```

<210> 146
<211> 70
<212> PRT
<213> Homo sapiens

<400> 146
Met Lys Pro Lys His Leu Glu Trp Cys Leu Ala His Ser Trp Cys Val
1   5   10   15

Ile Trp Leu Ser Phe Val Ser Pro Pro Thr Ser His Leu Glu Cys Asp
            20   25   30

Gly Phe Pro Gly Ser Leu Leu Pro Pro Cys Glu Glu Gly Arg Cys Phe
        35   40   45

Pro Phe Thr Phe His His His Asp Cys His Gly Cys Ser Pro Leu Gln
    50   55   60

Ser Ser Pro Gly Gln His
65   70

<210> 147
<211> 412
<212> PRT
<213> Homo sapiens

<400> 147
Met Cys Cys Trp Pro Leu Leu Leu Leu Trp Gly Leu Leu Pro Gly Thr
1   5   10   15

Ala Ala Gly Gly Ser Gly Arg Thr Tyr Pro His Arg Thr Leu Leu Asp
            20   25   30

Ser Glu Gly Lys Tyr Trp Leu Gly Trp Ser Gln Arg Gly Ser Gln Ile
        35   40   45

Ala Phe Arg Leu Gln Val Arg Thr Ala Gly Tyr Val Gly Phe Gly Phe
    50   55   60

Ser Pro Thr Gly Ala Met Ala Ser Ala Asp Ile Val Val Gly Gly Val
65   70   75   80

Ala His Gly Arg Pro Tyr Leu Gln Asp Tyr Phe Thr Asn Ala Asn Arg
                85   90   95

Glu Leu Lys Lys Asp Ala Gln Gln Asp Tyr His Leu Glu Tyr Ala Met
            100   105   110

Glu Asn Ser Thr His Thr Ile Ile Glu Phe Thr Arg Glu Leu His Thr
        115   120   125

Cys Asp Ile Asn Asp Lys Ser Ile Thr Asp Ser Thr Val Arg Val Ile
    130   135   140

Trp Ala Tyr His His Glu Asp Ala Gly Glu Ala Gly Pro Lys Tyr His
145   150   155   160

```
Asp Ser Asn Arg Gly Thr Lys Ser Leu Arg Leu Leu Asn Pro Glu Lys
                165                 170                 175

Thr Ser Val Leu Ser Thr Ala Leu Pro Tyr Phe Asp Leu Val Asn Gln
            180                 185                 190

Asp Val Pro Ile Pro Asn Lys Asp Thr Thr Tyr Trp Cys Gln Met Phe
        195                 200                 205

Lys Ile Pro Val Phe Gln Glu Lys His His Val Ile Lys Val Glu Pro
    210                 215                 220

Val Ile Gln Arg Gly His Glu Ser Leu Val His His Ile Leu Leu Tyr
225                 230                 235                 240

Gln Cys Ser Asn Asn Phe Asn Asp Ser Val Leu Glu Ser Gly His Glu
                245                 250                 255

Cys Tyr His Pro Asn Met Pro Asp Ala Phe Leu Thr Cys Glu Thr Val
            260                 265                 270

Ile Phe Ala Trp Ala Ile Gly Gly Glu Gly Phe Ser Tyr Pro Pro His
        275                 280                 285

Val Gly Leu Ser Leu Gly Thr Pro Leu Asp Pro His Tyr Val Leu Leu
    290                 295                 300

Glu Val His Tyr Asp Asn Pro Thr Tyr Glu Glu Gly Leu Ile Asp Asn
305                 310                 315                 320

Ser Gly Leu Arg Leu Phe Tyr Thr Met Asp Ile Arg Lys Tyr Asp Ala
                325                 330                 335

Gly Val Ile Glu Ala Gly Leu Trp Val Ser Leu Phe His Thr Ile Pro
            340                 345                 350

Pro Gly Met Pro Glu Phe Gln Ser Glu Gly His Cys Thr Leu Glu Cys
        355                 360                 365

Leu Glu Glu Leu Trp Lys Pro Lys Ser Gln Val Glu Phe Met Cys Leu
    370                 375                 380

Leu Phe Phe Ser Met Leu Thr Trp Leu Ala Glu His Gln Ala Ala Ser
385                 390                 395                 400

Phe Ser Lys Arg Glu Gly Asn Glu Ile Thr Cys Leu
                405                 410
```

<210> 148
<211> 85
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (85)
<223> Xaa equals stop translation

<400> 148
Met Asn Val Phe Leu Pro Pro Ala Leu Gly Thr Trp Gly Val Ala Arg
1 5 10 15

Phe Phe Pro His Leu Val Pro Glu Arg Trp Cys Leu Val Phe Cys Cys
20 25 30

Trp Ile Phe Phe Phe Phe Phe Phe Phe Cys Thr Lys Val Ala Thr Arg
35 40 45

Ser Val Leu Gly Asp Gln Ala Gly Leu Gly Val Gly Gly Pro His Leu
50 55 60

Pro Leu Pro Gly Ser His Ser Val Ser Val Pro Glu Lys Thr Ile Phe
65 70 75 80

Ser Leu Lys Gln Xaa
85

<210> 149
<211> 154
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (154)
<223> Xaa equals stop translation

<400> 149
Met Gly Arg Leu Pro Leu Leu Arg Arg Val Leu Lys Gly Leu Gln Leu
1 5 10 15

Leu Leu Ser Leu Leu Ala Phe Ile Cys Glu Glu Val Val Ser Gln Cys
20 25 30

Thr Leu Cys Gly Gly Leu Tyr Phe Phe Glu Phe Val Ser Cys Ser Ala
35 40 45

Phe Leu Leu Ser Leu Leu Ile Leu Ile Val Tyr Cys Thr Pro Phe Tyr
50 55 60

Glu Arg Val Asp Thr Thr Lys Val Lys Ser Ser Asp Phe Tyr Ile Thr
65 70 75 80

Leu Gly Thr Gly Cys Val Phe Leu Leu Ala Ser Ile Ile Phe Val Ser
85 90 95

Thr His Asp Arg Thr Ser Ala Glu Ile Ala Ala Ile Val Phe Gly Phe
100 105 110

Ile Ala Ser Phe Met Phe Leu Leu Asp Phe Ile Thr Met Leu Tyr Glu
115 120 125

Lys Arg Gln Glu Ser Gln Leu Arg Lys Pro Glu Asn Thr Thr Arg Ala
130 135 140

Glu Ala Leu Thr Glu Pro Leu Asn Ala Xaa

145 150

<210> 150
<211> 130
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (130)
<223> Xaa equals stop translation

<400> 150
Met Arg Gly His Leu Ala Gly Phe Pro Ala Leu Ser Gly Leu Ala Ser
1 5 10 15

Val Cys Leu Trp Ala Thr Phe Ser Ala Gln Leu Pro Gly Pro Val Ala
20 25 30

Ala Thr Ser Trp Thr Pro Ala Pro Leu Gly Cys Ser Ala Ala Arg Ser
35 40 45

Gly Pro Glu Lys Arg Leu Gly Thr Ala Ala Pro Gly Ser Ala Ala Ser
50 55 60

Leu Ala Gln Ala Gly Pro Gly Ala Pro Cys Arg Val Leu Pro Val Asp
65 70 75 80

Pro Ala Pro Ala Ala Leu Asn Val Arg Glu Pro Gly Trp Leu Gly Gly
85 90 95

Leu Phe Asp Gly Ala Leu Leu Gln Val Leu Leu Asn Phe Leu Arg Lys
100 105 110

Ser Thr Asp Val Leu Met Asp Thr Arg Glu Ala Glu Ser Leu Glu Val
115 120 125

Glu Xaa
130

<210> 151
<211> 62
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (62)
<223> Xaa equals stop translation

<400> 151
Met Leu Phe Trp Ala Tyr Pro Ile Cys Val Phe Ile Asp Ser Leu Ser
1 5 10 15

Cys Gln Pro Cys Leu Trp Ser Thr Gly Ala Thr Ser His Phe Asn Ser
20 25 30

```
Pro Thr Thr Ser Pro Leu Phe Thr Leu Phe Met Pro Cys Ala Leu Ala
        35                  40                  45

Pro Asn Pro Phe Thr Gln Leu Gly Lys Leu Asp Asp Arg Xaa
    50                  55                  60


<210> 152
<211> 225
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (225)
<223> Xaa equals stop translation

<400> 152
Met Gly Ile Phe Pro Gly Ile Ile Leu Ile Phe Leu Arg Val Lys Phe
1               5                   10                  15

Ala Thr Ala Ala Val Ile Val Ser Gly His Gln Lys Ser Thr Thr Val
            20                  25                  30

Ser His Glu Met Ser Gly Leu Asn Trp Lys Pro Phe Val Tyr Gly Gly
        35                  40                  45

Leu Ala Ser Ile Val Ala Glu Phe Gly Thr Phe Pro Val Asp Leu Thr
    50                  55                  60

Lys Thr Arg Leu Gln Val Gln Gly Gln Ser Ile Asp Ala Arg Phe Lys
65                  70                  75                  80

Glu Ile Lys Tyr Arg Gly Met Phe His Ala Leu Phe Arg Ile Cys Lys
                85                  90                  95

Glu Glu Gly Val Leu Ala Leu Tyr Ser Gly Ile Ala Pro Ala Leu Leu
            100                 105                 110

Arg Gln Ala Ser Tyr Gly Thr Ile Lys Ile Gly Ile Tyr Gln Ser Leu
        115                 120                 125

Lys Arg Leu Phe Val Glu Arg Leu Glu Asp Glu Thr Leu Leu Ile Asn
    130                 135                 140

Met Ile Cys Gly Val Val Ser Gly Val Ile Ser Ser Thr Ile Ala Asn
145                 150                 155                 160

Pro Thr Asp Val Leu Lys Ile Arg Met Gln Ala Gln Gly Ser Leu Phe
                165                 170                 175

Gln Gly Ser Met Ile Gly Ser Phe Ile Asp Ile Tyr Gln Gln Glu Gly
            180                 185                 190

Thr Arg Gly Leu Trp Arg Val Ser Thr Leu Phe Leu Leu Leu Ser Tyr
        195                 200                 205

Thr Leu Ser Ser Tyr Asn Leu Gln Arg Ile Phe Phe Tyr Ile Lys Thr
    210                 215                 220
```

Xaa
225

<210> 153
<211> 69
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (69)
<223> Xaa equals stop translation

<400> 153
Met Leu Met Leu Leu Thr Leu Leu Val Leu Gly Met Val Trp Val Ala
1 5 10 15

Ser Ala Ile Val Asp Lys Asn Lys Ala Asn Arg Glu Ser Leu Tyr Asp
20 25 30

Phe Trp Glu Tyr Tyr Leu Pro Tyr Leu Tyr Ser Cys Ile Ser Phe Leu
35 40 45

Gly Val Leu Leu Leu Leu Ala Ala Gly Arg Pro Gly Gly Ala Ala Val
50 55 60

Leu Leu Ser Leu Xaa
65

<210> 154
<211> 84
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (84)
<223> Xaa equals stop translation

<400> 154
Met Tyr Gly Val Cys Leu Cys Val Ile Val Cys Val Ser Gly Val Ser
1 5 10 15

Leu Cys Leu Tyr Val Trp Gly Val Ser Val Cys Asp Cys Val Ser Val
20 25 30

Phe Met Cys Val Cys Leu Cys Val Ile Phe Cys Val Tyr Gly Lys Pro
35 40 45

Arg Thr Glu His Tyr His Ser Pro His Leu Ala Lys Gln Lys Ala Phe
50 55 60

Arg Glu Met Cys Gly Arg His Asp Val Ser Ala Ala Gly Ile Phe Gln
65 70 75 80

Ser Tyr Val Xaa

<210> 155
<211> 61
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (61)
<223> Xaa equals stop translation

<400> 155
Met His Val Leu Leu Phe Ser Phe Leu Ile Pro Phe Leu Leu Leu Ser
1 5 10 15

Pro Val Gly Val Thr Cys Asn Ser His Met Leu Glu Arg Gln Val Ser
20 25 30

Trp Leu Lys Lys Arg Ser Thr Gln Ala Ser Gln Gln Phe Asn Lys Phe
35 40 45

Leu Arg Gly Ile Ser Asn Val Gly Arg Ile Val Ile Xaa
50 55 60

<210> 156
<211> 84
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (84)
<223> Xaa equals stop translation

<400> 156
Met Cys Leu Leu Val Glu Tyr Ser Leu Met Ile Leu Thr Ile Ile Pro
1 5 10 15

Ser Leu Leu Ser Phe Val Leu Cys Leu Lys Gly Ile Lys His Gly Asn
20 25 30

Tyr Ile Phe Gln Thr Pro Leu Pro Glu Gly Tyr Gly Trp Ile Ser Ala
35 40 45

Met Ser Gly Leu Cys Ile Lys Phe Gly Arg Arg Lys Arg Arg Lys Thr
50 55 60

Trp Leu Leu Gln Val Gly Thr Leu Ala Thr Ile Asp Thr Glu Phe Ala
65 70 75 80

Arg Ser Cys Xaa

<210> 157
<211> 162

<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (162)
<223> Xaa equals stop translation

<400> 157
Met Ala Leu Ser Leu Thr Leu Cys Phe Val Met Phe Trp Thr Pro Asn
1 5 10 15

Val Ser Glu Lys Ile Leu Ile Asp Ile Ile Gly Val Asp Phe Ala Phe
20 25 30

Ala Glu Leu Cys Val Val Pro Leu Arg Ile Phe Ser Phe Phe Pro Val
35 40 45

Pro Val Thr Val Arg Ala His Leu Thr Gly Trp Leu Met Thr Leu Lys
50 55 60

Lys Thr Phe Val Leu Ala Pro Ser Ser Val Leu Arg Ile Ile Val Leu
65 70 75 80

Ile Ala Ser Leu Val Val Leu Pro Tyr Leu Gly Val His Gly Ala Thr
85 90 95

Leu Gly Val Gly Ser Leu Leu Ala Gly Phe Val Gly Glu Ser Thr Met
100 105 110

Val Ala Ile Ala Ala Cys Tyr Val Tyr Arg Lys Gln Lys Lys Lys Met
115 120 125

Glu Asn Glu Ser Ala Thr Glu Gly Glu Asp Ser Ala Met Thr Asp Met
130 135 140

Pro Pro Thr Glu Glu Val Thr Asp Ile Val Glu Met Arg Glu Glu Asn
145 150 155 160

Glu Xaa

<210> 158
<211> 146
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (96)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (107)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE
<222> (111)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (115)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (122)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (132)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 158
Met Glu Pro Gln Leu Gly Pro Glu Ala Ala Ala Leu Arg Pro Gly Trp
1 5 10 15

Leu Ala Leu Leu Leu Trp Val Ser Ala Leu Ser Cys Ser Phe Ser Leu
20 25 30

Pro Ala Ser Ser Leu Ser Ser Leu Val Pro Gln Val Arg Thr Ser Tyr
35 40 45

Asn Phe Gly Arg Thr Phe Leu Gly Leu Asp Lys Cys Asn Ala Cys Ile
50 55 60

Gly Thr Ser Ile Cys Lys Lys Phe Phe Lys Glu Glu Ile Arg Ser Asp
65 70 75 80

Asn Trp Leu Ala Ser His Leu Gly Thr Ala Ser Arg Phe Pro Leu Xaa
85 90 95

Ser Tyr Pro Cys Lys Leu Leu Gln Met Ile Xaa Lys Ile Trp Xaa Pro
100 105 110

Cys Gly Xaa Leu Leu Thr Gly Gln Gln Xaa Ser Asn Glu Ile Ser Lys
115 120 125

Gln Glu Ile Xaa Cys Leu Leu His Pro Pro Pro Lys Asn Leu His Ile
130 135 140

Asp Val
145

<210> 159
<211> 143
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (143)

<223> Xaa equals stop translation

<400> 159
Met Trp Trp Ala Val Met Gly Gly Val Ile Gly Ser Trp Leu Ser Pro
1 5 10 15

Leu Ser Ile Ala Glu Cys Cys His Asp Leu Trp Thr Ser Gln Ser Cys
20 25 30

Glu His Ala Gly Ala Leu Cys Gly Asp Leu Leu Cys Ala Cys Arg Lys
35 40 45

Val Gly Val Trp Cys Ala Leu Gln Gln His Trp Trp Asn Arg Cys Val
50 55 60

Cys Pro His Ala Val Ile Arg Val His Cys Thr Gly Ala Ser Tyr Thr
65 70 75 80

Leu Gln Lys Ile Cys Ser Cys Asn Pro Lys Phe Met Gly Arg His Pro
85 90 95

His Arg Trp Gln Gln Ile Arg Lys Cys Ser Gln Pro Val Leu Arg Gly
100 105 110

Ser Arg Ala Ala Phe Ile Trp Val Arg Leu Ala Ala Leu Asn Phe Ile
115 120 125

Ser Ser Phe Arg Cys Ile Ser Leu Ile Ser Tyr Ser Ala Phe Xaa
130 135 140

<210> 160
<211> 51
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (51)
<223> Xaa equals stop translation

<400> 160
Met Lys Val Ser Asp Phe Asn Phe Leu Ile Phe Leu Ile Phe Ala Leu
1 5 10 15

Phe Leu Thr Leu Glu Ala Phe Leu Lys Phe Thr Lys Arg Val Leu Ala
20 25 30

Val Val Gly Asn Leu Pro Glu Pro Pro Ile Ile Lys Thr Ile Gly Phe
35 40 45

Leu Tyr Xaa
50

<210> 161
<211> 65
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (65)
<223> Xaa equals stop translation

<400> 161
Met Val Trp Ser Ala Ala Pro Ala Pro Cys Cys Leu Leu Gly Val Leu
1 5 10 15

Gly Leu Val Gln Val Leu Gly Ala Gln Ala Val Gly Pro Trp Thr Ala
20 25 30

Ser Ala Cys Leu Gly Ala Ala Gln Ala Gln Pro Cys Arg Pro Cys Lys
35 40 45

Glu Ser Ser Leu Arg Leu Phe Ser Ala Ser Ala Pro Ser Met Thr His
50 55 60

Xaa
65

<210> 162
<211> 59
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (59)
<223> Xaa equals stop translation

<400> 162
Met Glu Lys Tyr Cys Leu Gly Asn Asn Met Leu Ser Arg Phe Cys Leu
1 5 10 15

Phe Leu Ile Met Leu Leu His Ile Leu Leu Phe Leu Val Ile Phe Ile
20 25 30

Gln Arg His Thr Val Val Ser Leu Ser Lys His His Pro Phe Val Pro
35 40 45

Thr Asn Gly Ser Lys Ser Tyr Ser Ser Phe Xaa
50 55

<210> 163
<211> 374
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (84)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE

<222> (112)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 163
Met Arg Pro Gly Thr Ala Leu Gln Ala Val Leu Leu Ala Val Leu Leu
1   5   10   15

Val Gly Leu Arg Ala Ala Thr Gly Arg Leu Leu Ser Gly Gln Pro Val
            20   25   30

Cys Arg Gly Gly Thr Gln Arg Pro Cys Tyr Lys Val Ile Tyr Phe His
        35   40   45

Asp Thr Ser Arg Arg Leu Asn Phe Glu Glu Ala Lys Glu Ala Cys Arg
    50   55   60

Arg Asp Gly Gly Gln Leu Val Ser Ile Glu Ser Glu Asp Glu Gln Lys
65   70   75   80

Leu Ile Glu Xaa Phe Ile Glu Asn Leu Leu Pro Ser Asp Gly Asp Phe
                85   90   95

Trp Ile Gly Leu Arg Arg Arg Glu Glu Lys Gln Ser Asn Ser Thr Xaa
            100   105   110

Cys Gln Asp Leu Tyr Ala Trp Thr Asp Gly Ser Ile Ser Gln Phe Arg
        115   120   125

Asn Trp Tyr Val Asp Glu Pro Ser Cys Gly Ser Glu Val Cys Val Val
    130   135   140

Met Tyr His Gln Pro Ser Ala Pro Ala Gly Ile Gly Gly Pro Tyr Met
145   150   155   160

Phe Gln Trp Asn Asp Asp Arg Cys Asn Met Lys Asn Asn Phe Ile Cys
                165   170   175

Lys Tyr Ser Asp Glu Lys Pro Ala Val Pro Ser Arg Glu Ala Glu Gly
            180   185   190

Glu Glu Thr Glu Leu Thr Thr Pro Val Leu Pro Glu Glu Thr Gln Glu
        195   200   205

Glu Asp Ala Lys Lys Thr Phe Lys Glu Ser Arg Glu Ala Ala Leu Asn
    210   215   220

Leu Ala Tyr Ile Leu Ile Pro Ser Ile Pro Leu Leu Leu Leu Leu Val
225   230   235   240

Val Thr Thr Val Val Cys Trp Val Trp Ile Cys Arg Lys Arg Lys Arg
                245   250   255

Glu Gln Pro Asp Pro Ser Thr Lys Lys Gln His Thr Ile Trp Pro Ser
            260   265   270

Pro His Gln Gly Asn Ser Pro Asp Leu Glu Val Tyr Asn Val Ile Arg
        275   280   285

Lys Gln Ser Glu Ala Asp Leu Ala Glu Thr Arg Pro Asp Leu Lys Asn

290 295 300

Ile Ser Phe Arg Val Cys Ser Gly Glu Ala Thr Pro Asp Asp Met Ser
305 310 315 320

Cys Asp Tyr Asp Asn Met Ala Val Asn Pro Ser Glu Ser Gly Phe Val
325 330 335

Thr Leu Val Ser Val Glu Ser Gly Phe Val Thr Asn Asp Ile Tyr Glu
340 345 350

Phe Ser Pro Asp Gln Met Gly Arg Ser Lys Glu Ser Gly Trp Val Glu
355 360 365

Asn Glu Ile Tyr Gly Tyr
370

<210> 164
<211> 64
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (64)
<223> Xaa equals stop translation

<400> 164
Met His Pro Gln Leu Ile Pro Ser Val Ile Ala Val Val Phe Ile Leu
1 5 10 15

Leu Leu Gly Val Cys Phe Ile Ala Ser Cys Leu Val Thr His His Asn
20 25 30

Phe Ser Arg Cys Lys Arg Gly Thr Gly Val His Lys Leu Glu His His
35 40 45

Ala Lys Leu Lys Cys Ile Lys Glu Lys Ser Glu Leu Lys Ser Cys Xaa
50 55 60

<210> 165
<211> 743
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (743)
<223> Xaa equals stop translation

<400> 165
Met Ala Val Arg Glu Leu Cys Phe Pro Arg Gln Arg Gln Val Leu Phe
1 5 10 15

Leu Phe Leu Phe Trp Gly Val Ser Leu Ala Gly Ser Gly Phe Gly Arg
20 25 30

Tyr Ser Val Thr Glu Glu Thr Glu Lys Gly Ser Phe Val Val Asn Leu
35 40 45

Ala Lys Asp Leu Gly Leu Ala Glu Gly Glu Leu Ala Ala Arg Gly Thr
50 55 60

Arg Val Val Ser Asp Asp Asn Lys Gln Tyr Leu Leu Leu Asp Ser His
65 70 75 80

Thr Gly Asn Leu Leu Thr Asn Glu Lys Leu Asp Arg Glu Lys Leu Cys
85 90 95

Gly Pro Lys Glu Pro Cys Met Leu Tyr Phe Gln Ile Leu Met Asp Asp
100 105 110

Pro Phe Gln Ile Tyr Arg Ala Glu Leu Arg Val Arg Asp Ile Asn Asp
115 120 125

His Ala Pro Val Phe Gln Asp Lys Glu Thr Val Leu Lys Ile Ser Glu
130 135 140

Asn Thr Ala Glu Gly Thr Ala Phe Arg Leu Glu Arg Ala Gln Asp Pro
145 150 155 160

Asp Gly Gly Leu Asn Gly Ile Gln Asn Tyr Thr Ile Ser Pro Asn Ser
165 170 175

Phe Phe His Ile Asn Ile Ser Gly Gly Asp Glu Gly Met Ile Tyr Pro
180 185 190

Glu Leu Val Leu Asp Lys Ala Leu Asp Arg Glu Glu Gln Gly Glu Leu
195 200 205

Ser Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Ser Arg Ser Gly
210 215 220

Thr Ser Thr Val Arg Ile Val Val Leu Asp Val Asn Asp Asn Ala Pro
225 230 235 240

Gln Phe Ala Gln Ala Leu Tyr Glu Thr Gln Ala Pro Glu Asn Ser Pro
245 250 255

Ile Gly Phe Leu Ile Val Lys Val Trp Ala Glu Asp Val Asp Ser Gly
260 265 270

Val Asn Ala Glu Val Ser Tyr Ser Phe Phe Asp Ala Ser Glu Asn Ile
275 280 285

Arg Thr Thr Phe Gln Ile Asn Pro Phe Ser Gly Glu Ile Phe Leu Arg
290 295 300

Glu Leu Leu Asp Tyr Glu Leu Val Asn Ser Tyr Lys Ile Asn Ile Gln
305 310 315 320

Ala Met Asp Gly Gly Gly Leu Ser Ala Arg Cys Arg Val Leu Val Glu
325 330 335

Val Leu Asp Thr Asn Asp Asn Pro Pro Glu Leu Ile Val Ser Ser Phe
340 345 350

Ser Asn Ser Val Ala Glu Asn Ser Pro Glu Thr Pro Leu Ala Val Phe
355 360 365

Lys Ile Asn Asp Arg Asp Ser Gly Glu Asn Gly Lys Met Val Cys Tyr
370 375 380

Ile Gln Glu Asn Leu Pro Phe Leu Leu Lys Pro Ser Val Glu Asn Phe
385 390 395 400

Tyr Ile Leu Ile Thr Glu Gly Ala Leu Asp Arg Glu Ile Arg Ala Glu
405 410 415

Tyr Asn Ile Thr Ile Thr Val Thr Asp Leu Gly Thr Pro Arg Leu Lys
420 425 430

Thr Glu His Asn Ile Thr Val Leu Val Ser Asp Val Asn Asn Asn Ala
435 440 445

Pro Ala Phe Thr Gln Thr Ser Tyr Thr Leu Phe Val Arg Glu Asn Asn
450 455 460

Ser Pro Ala Leu His Ile Gly Ser Val Ser Ala Thr Asp Arg Asp Ser
465 470 475 480

Gly Thr Asn Ala Gln Val Thr Tyr Ser Leu Leu Pro Pro Gln Asp Pro
485 490 495

His Leu Pro Leu Ala Ser Leu Val Ser Ile Asn Ala Asp Asn Gly His
500 505 510

Leu Phe Ala Leu Arg Ser Leu Asp Tyr Glu Ala Leu Gln Ala Phe Glu
515 520 525

Phe Arg Val Gly Ala Thr Asp Arg Gly Ser Pro Ala Leu Asn Ser Glu
530 535 540

Ala Leu Gly Ala Arg Ala Gly Ala Gly Arg Gln Arg Gln Leu Ala Leu
545 550 555 560

Arg Ala Val Pro Ala Ala Glu Arg Leu Arg Ala Leu His Arg Ala Gly
565 570 575

Ala Pro Gly Gly Arg Ala Gly Leu Pro Gly Asp Gln Gly Gly Gly Gly
580 585 590

Gly Arg Arg Leu Gly Pro Glu Arg Leu Ala Val Val Pro Ala Ala Gln
595 600 605

Gly His Gly Ala Arg Ala Val Arg Cys Val Gly Ala Gln Trp Gly Gly
610 615 620

Ala His Arg Gln Ala Ala Glu Arg Ala Arg Arg Ser Gln Ala Gln Ala
625 630 635 640

Gly Gly Ala Cys Gln Gly Gln Trp Arg Ala Ser Ser Leu Gly His Arg

645 650 655

His Ala Ala Arg Ala Pro Gly Gly Arg Leu Leu Pro Ala Leu Pro Ala
660 665 670

Ser Pro Gly Gly Gly Pro Gly Pro Gly Pro Gly Arg Leu Ala His Arg
675 680 685

Leu Pro Gly Gly Gly Val Gly Leu Gly Val Phe Ala Leu Pro Pro Leu
690 695 700

Gly Ala Pro Val Arg Gly Gly Ala Ala Val Gln Glu Glu Gln Gly Gly
705 710 715 720

Leu Gly Gly Ser Leu Leu Gly Ala Arg Gly Ser Phe Ser Arg Ala Ser
725 730 735

Gly Gly Arg Glu Gly Arg Xaa
740

<210> 166
<211> 214
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (214)
<223> Xaa equals stop translation

<400> 166
Met Asn Arg Met Glu Leu Leu Lys Leu Leu Leu Thr Cys Phe Ser Glu
1 5 10 15

Ala Met Tyr Leu Pro Pro Ala Pro Glu Ser Gly Ser Thr Asn Pro Trp
20 25 30

Val Gln Phe Phe Cys Ser Thr Glu Asn Arg His Ala Leu Pro Leu Phe
35 40 45

Thr Ser Leu Leu Asn Thr Val Cys Ala Tyr Asp Pro Val Gly Tyr Gly
50 55 60

Ile Pro Tyr Asn His Leu Leu Phe Ser Asp Tyr Arg Glu Pro Leu Val
65 70 75 80

Glu Glu Ala Ala Gln Val Leu Ile Val Thr Leu Asp His Asp Ser Ala
85 90 95

Ser Ser Ala Ser Pro Thr Val Asp Gly Thr Thr Thr Gly Thr Ala Met
100 105 110

Asp Asp Ala Asp Pro Pro Gly Pro Glu Asn Leu Phe Val Asn Tyr Leu
115 120 125

Ser Arg Ile His Arg Glu Glu Asp Phe Gln Phe Ile Leu Lys Gly Ile
130 135 140

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Ala Arg Leu Leu Ser Asn Pro Leu Leu Gln Thr Tyr Leu Pro Asn Ser
145                 150                 155                 160

Thr Lys Lys Asp Pro Val Pro Pro Gly Ala Ala Ser Ser Leu Leu Glu
                165                 170                 175

Ala Leu Arg Leu Gln Gln Glu Ile Pro Leu Leu Arg Ala Glu Glu Gln
            180                 185                 190

Arg Arg Pro Arg His Pro Cys Pro His Pro Leu Leu Pro Gln Arg Cys
        195                 200                 205

Pro Gly Arg Ser Val Xaa
    210


<210> 167
<211> 213
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (213)
<223> Xaa equals stop translation

<400> 167
Met Pro Ser Leu Arg Phe Leu Ala Leu Ala Leu Leu Leu Ala Ile Leu
  1               5                  10                  15

Pro Ala Leu Pro Asn Ala His Ala Ala Pro Gly Ile Gly Gly Leu Ile
             20                  25                  30

Gly Gly Gly Ser Gln Ala Ser Ala Lys Glu Glu Pro Gln Ser Asn Ala
         35                  40                  45

Gln Pro Ser Ala Asp Glu Arg Lys Gln Arg Leu Leu Ser Gln Ala Glu
     50                  55                  60

Glu Thr Arg Gln Arg Leu Thr Asp Leu Lys Ala Glu Leu Ala Gly Ala
 65                  70                  75                  80

Pro Lys Glu Ile Ser Glu Ala Gln Arg Thr Leu Ser Lys Leu Val Ser
                 85                  90                  95

Glu Asp Asn Ser Asp Leu Pro Glu Arg Leu Ser Lys Leu Ser Val Pro
            100                 105                 110

Val Leu Glu Gln Arg Leu Ala Ala Arg Val Asp Glu Leu Ala Leu Trp
        115                 120                 125

Gln Gln Ala Leu Ser Ala Ala Asn Ser Met Leu Ile Ser Ala Gln Thr
    130                 135                 140

Arg Pro Glu Arg Ala Gln Ala Asp Ile Ser Lys Asn Gln Leu Arg Ile
145                 150                 155                 160

Asp Glu Ile Asn Gly Leu Leu Lys Ser Gly Arg Glu Asn Asn Lys Pro
                165                 170                 175
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Leu Thr Asp Glu Arg Arg Ala Leu Leu Glu Ser Thr Ser Arg Ala Ala
180 185 190

Ala Gly Pro Ser Ile Phe His Pro Gly Gly Val Pro Gly Lys Cys Thr
195 200 205

Gln Phe Ala Leu Xaa
210

<210> 168
<211> 75
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (75)
<223> Xaa equals stop translation

<400> 168
Met Phe Thr Ser Phe Gly Leu Ala Ser Pro Arg Ile Leu Phe Cys Phe
1 5 10 15

Cys Phe Phe Asp Leu Gly Phe Ile Phe Phe Cys Val Leu Tyr Tyr Ile
20 25 30

Val Lys Gly Ile Leu Ala Glu Thr Leu Val Phe Gly Ala Arg Gly Glu
35 40 45

Gln Glu Cys Trp Ala Val Tyr Phe Arg Trp Arg Thr His Leu Gln Thr
50 55 60

Phe Gly Leu Phe Ser Phe Asn Cys Ser Val Xaa
65 70 75

<210> 169
<211> 48
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (48)
<223> Xaa equals stop translation

<400> 169
Met Phe Leu Cys Leu Phe Phe Phe Phe Phe Asn Ala Thr Gln Gly Asn
1 5 10 15

Ile Phe Ile Ser Phe Leu Ser Gly Leu Pro Gln Cys Ile Phe Ile Ser
20 25 30

Phe Glu Thr Lys Arg Phe Trp Lys Leu Phe Phe Cys Ser Phe Lys Xaa
35 40 45

<210> 170
<211> 88
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (88)
<223> Xaa equals stop translation

<400> 170
Met Gly Leu His Leu Arg Pro Tyr Arg Val Gly Leu Leu Pro Asp Gly
1 5 10 15

Leu Leu Phe Leu Leu Leu Leu Leu Met Leu Leu Ala Asp Pro Ala Leu
20 25 30

Pro Ala Gly Arg His Pro Pro Val Val Leu Val Pro Gly Asp Leu Gly
35 40 45

Asn Gln Leu Glu Ala Lys Leu Asp Lys Pro Thr Val Val His Tyr Leu
50 55 60

Cys Ser Lys Lys Thr Glu Ser Tyr Phe Thr Ile Trp Leu Asn Leu Glu
65 70 75 80

Leu Leu Leu Pro Val His His Xaa
85

<210> 171
<211> 42
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (42)
<223> Xaa equals stop translation

<400> 171
Met Ala Cys Glu Thr His Gly Val Leu Val Pro Ala His Leu Ser Gly
1 5 10 15

Leu Ile Thr Cys Leu Leu Ala Phe Trp Val Pro Ala Ser Cys Ile Gln
20 25 30

Arg Cys Ser Gly Ser Pro Leu Pro Leu Xaa
35 40

<210> 172
<211> 48
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (48)
<223> Xaa equals stop translation

<400> 172
Met Gln Cys Phe Leu Phe Ser Ile Phe Leu Ile Thr Gly Leu Ala Glu
1 5 10 15

Glu Phe Cys Glu Gln Leu Ser Ile Ser Leu Ala Glu Glu Glu Ile Gln
20 25 30

Leu Ser Ser Thr Val Glu His Phe Cys Met Thr Ala Phe Ser Trp Xaa
35 40 45

<210> 173
<211> 233
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (233)
<223> Xaa equals stop translation

<400> 173
Met Ala Ala Leu Ala Ala Ala Ala Lys Lys Val Trp Ser Ala Arg Arg
1 5 10 15

Leu Leu Val Leu Leu Phe Thr Pro Leu Ala Leu Leu Pro Val Val Phe
20 25 30

Ala Leu Pro Pro Lys Glu Gly Arg Cys Leu Phe Val Ile Leu Leu Met
35 40 45

Ala Val Tyr Trp Cys Thr Glu Ala Leu Pro Leu Ser Val Thr Ala Leu
50 55 60

Leu Pro Ile Val Leu Phe Pro Phe Met Gly Ile Leu Pro Ser Asn Lys
65 70 75 80

Val Cys Pro Gln Tyr Phe Leu Asp Thr Asn Phe Leu Phe Leu Ser Gly
85 90 95

Leu Ile Met Ala Ser Ala Ile Glu Glu Trp Asn Leu His Arg Arg Ile
100 105 110

Ala Leu Lys Ile Leu Met Leu Val Gly Val Gln Pro Ala Arg Leu Ile
115 120 125

Leu Gly Met Met Val Thr Thr Ser Phe Leu Ser Met Trp Leu Ser Asn
130 135 140

Thr Ala Ser Thr Ala Met Met Leu Pro Ile Ala Asn Ala Ile Leu Lys
145 150 155 160

Ser Leu Phe Gly Gln Lys Glu Val Arg Lys Asp Pro Ser Gln Glu Ser
165 170 175

Glu Glu Asn Thr Gly Ile Glu Pro Asn Thr Phe Leu Ser Glu Glu Arg
180 185 190

Leu Lys Leu Gln Ala Pro Leu Val Ile Arg Leu Gly Gln Ile Thr Glu
195 200 205

Ser Gly Gln Trp Asn Met Ser Gly Asn Asp Val Cys Asn Phe Arg Val
210 215 220

Leu Ser Phe Leu Pro Gly Gly Met Xaa
225 230

<210> 174
<211> 45
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (45)
<223> Xaa equals stop translation

<400> 174
Met Gly Thr Ile Phe Gly Tyr Leu His Cys Val Lys Cys Tyr Val Leu
1 5 10 15

Tyr Phe Ile Phe Ile Leu Ile Thr Ala Val Tyr His Ser Phe Tyr Tyr
20 25 30

Pro His Tyr Arg Gly Lys Ala Leu Ile Ser Gly Thr Xaa
35 40 45

<210> 175
<211> 85
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (77)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (85)
<223> Xaa equals stop translation

<400> 175
Met Val Trp Phe Leu Phe Leu Val Phe Ile Phe Leu Lys Val Lys Gly
1 5 10 15

Asp Phe Phe Pro Pro Phe Leu Ile Cys Asn Leu Phe Cys Ile Trp Met
20 25 30

Ile Thr Gly Val Ser His Arg Leu Gln Pro Gln Ile Leu Phe Ser Arg
35 40 45

His Lys His Asn Gln Glu Ile Ile Leu Gln Met Val Ser Phe Ser Cys
50 55 60

Cys Val Phe Phe Pro Met Ile Arg Glu Val Lys Ser Xaa Leu Gly Cys
65 70 75 80

Ile Lys Met Ser Xaa
85

<210> 176
<211> 66
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (66)
<223> Xaa equals stop translation

<400> 176
Met Trp Val Leu Leu Ser Cys Pro Leu Pro Pro Leu Cys Leu Pro Ala
1 5 10 15

Ser Ala Val Pro Gly Gln Cys Leu Gly Gly Gln Trp Ser Gly His Gln
20 25 30

Leu Arg Leu Arg Gly Arg Gly Trp His Cys Arg Cys His Cys Arg Ala
35 40 45

Trp Ala Ala Asp Met Gly Arg Gly Leu His Ser Cys Gln Leu Leu Ser
50 55 60

Arg Xaa
65

<210> 177
<211> 55
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (55)
<223> Xaa equals stop translation

<400> 177
Met Leu Leu Leu Cys Ile Leu Leu Ile Phe Cys Val Val Gly Leu Ser
1 5 10 15

Val Val Gly Arg Arg Val Leu Lys Ser Thr Thr Ile Ile Val Tyr Leu
20 25 30

Ser Ile Thr Pro Phe Ser Ser Phe Ser Ser Ile Ser His Ile Phe Gln

35 40 45

Leu Leu Ile Gly Ala His Xaa
50 55

<210> 178
<211> 83
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (4)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (83)
<223> Xaa equals stop translation

<400> 178
Met Cys Val Xaa Leu Ser Phe Cys Pro Phe Leu Ser Ser Ala Leu Pro
1 5 10 15

Ala Ser His Thr Gln Phe Tyr Met Pro Arg Gly Ala Lys Phe Gly Thr
20 25 30

Phe Thr Leu Gln Ala Ser Val Ser Pro Leu Glu Glu Lys Thr His Ser
35 40 45

Phe Thr His Pro Gly Ile Gly Gly Lys Leu Leu Gly His Gln Asp Pro
50 55 60

Gly Ala Pro Gly Pro Ser Trp Asn Ile Arg Ser Thr Trp Ser Thr Arg
65 70 75 80

Ser Leu Xaa

<210> 179
<211> 330
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (38)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (247)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 179
Met Ser Pro Leu Ser Ala Ala Arg Ala Ala Leu Arg Val Tyr Ala Val
1 5 10 15

```
Gly Ala Ala Val Ile Leu Ala Gln Leu Leu Arg Arg Cys Arg Gly Gly
            20                  25                  30

Phe Leu Glu Pro Val Xaa Pro Pro Arg Pro Asp Arg Val Ala Ile Val
        35                  40                  45

Thr Gly Gly Thr Asp Gly Ile Gly Tyr Ser Thr Ala Lys His Leu Ala
    50                  55                  60

Arg Leu Gly Met His Val Ile Ile Ala Gly Asn Asn Asp Ser Lys Ala
65                  70                  75                  80

Lys Gln Val Val Ser Lys Ile Lys Glu Glu Thr Leu Asn Asp Lys Val
                85                  90                  95

Glu Phe Leu Tyr Cys Asp Leu Ala Ser Met Thr Ser Ile Arg Gln Phe
            100                 105                 110

Val Gln Lys Phe Lys Met Lys Lys Ile Pro Leu His Val Leu Ile Asn
        115                 120                 125

Asn Ala Gly Val Met Met Val Pro Gln Arg Lys Thr Arg Asp Gly Phe
    130                 135                 140

Glu Glu His Phe Gly Leu Asn Tyr Leu Gly His Phe Leu Leu Thr Asn
145                 150                 155                 160

Leu Leu Leu Asp Thr Leu Lys Glu Ser Gly Ser Pro Gly His Ser Ala
                165                 170                 175

Arg Val Val Thr Val Ser Ser Ala Thr His Tyr Val Ala Glu Leu Asn
            180                 185                 190

Met Asp Asp Leu Gln Ser Ser Ala Cys Tyr Ser Pro His Ala Ala Tyr
        195                 200                 205

Ala Gln Ser Lys Leu Ala Leu Val Leu Phe Thr Tyr His Leu Gln Arg
    210                 215                 220

Leu Leu Ala Ala Glu Gly Ser His Val Thr Ala Asn Val Val Asp Pro
225                 230                 235                 240

Gly Val Val Asn Thr Asp Xaa Tyr Lys His Val Phe Trp Ala Thr Arg
                245                 250                 255

Leu Ala Lys Lys Leu Leu Gly Trp Leu Leu Phe Lys Thr Pro Asp Glu
            260                 265                 270

Gly Ala Trp Thr Ser Ile Tyr Ala Ala Val Thr Pro Glu Leu Glu Gly
        275                 280                 285

Val Gly Gly Arg Tyr Leu Tyr Asn Glu Lys Glu Thr Lys Ser Leu His
    290                 295                 300

Val Thr Tyr Asn Gln Lys Leu Gln Gln Gln Leu Trp Ser Lys Ser Cys
305                 310                 315                 320

Glu Met Thr Gly Val Leu Asp Val Thr Leu
```

325 330

<210> 180
<211> 41
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (41)
<223> Xaa equals stop translation

<400> 180
Met Ile Ala Cys Gln Tyr Ile Ser Leu Ala Ile Met Leu Ala Phe Val
1 5 10 15

Arg Trp Ala Ala Phe Leu Leu Phe Pro Phe Leu Cys Gly Asp Asn Gly
20 25 30

Gly Asn Ile Gln Gln Lys Tyr Val Xaa
35 40

<210> 181
<211> 52
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (52)
<223> Xaa equals stop translation

<400> 181
Met Ala Asn Ala Met Ala Tyr Leu Ser Ile Phe Leu Cys Gly Ala Ser
1 5 10 15

Ser Ser Pro Cys Asp Cys Ala Leu Leu Val Pro Val Ser Leu Phe Arg
20 25 30

Gly Arg Lys Val Ala Asn Phe Lys Asn Gln Asn Ser Asp Val Thr Ser
35 40 45

Gly Asn Ala Xaa
50

<210> 182
<211> 55
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (55)
<223> Xaa equals stop translation

<400> 182

Met Gln Gln Ile Cys Ser Cys Leu Gly Ala Phe Ala Leu Leu Phe Phe
1 5 10 15

Trp Pro Gly His Phe Thr Ser Thr Phe Ser Ile Phe Tyr Asp Phe Leu
20 25 30

Pro Ile Phe Gly Ser Leu Phe Lys Cys His Pro Ser Lys Arg Pro Ser
35 40 45

Lys Leu Pro Tyr Leu Lys Xaa
50 55

<210> 183
<211> 62
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (62)
<223> Xaa equals stop translation

<400> 183
Met Arg Leu Leu Leu Glu Trp Arg Val Tyr Leu Arg Leu Thr Cys Ala
1 5 10 15

Thr Lys Asp Gly Met Ala Arg Glu Cys Pro Thr Thr Trp Leu Ser Pro
20 25 30

Pro Ala Lys Pro Asp Phe Ala Gln Arg His Ser Val Lys Pro Thr Ala
35 40 45

Leu Gln Gly Gly Arg Trp Ser Arg Leu Gly Ala Ser Pro Xaa
50 55 60

<210> 184
<211> 148
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (148)
<223> Xaa equals stop translation

<400> 184
Met Leu Gly Leu Pro Trp Lys Gly Gly Leu Ser Trp Ala Leu Leu Leu
1 5 10 15

Leu Leu Leu Gly Ser Gln Ile Leu Leu Ile Tyr Ala Trp His Phe His
20 25 30

Glu Gln Arg Asp Cys Asp Glu His Asn Val Met Ala Arg Tyr Leu Pro
35 40 45

Ala Thr Val Glu Phe Ala Val His Thr Phe Asn Gln Gln Ser Lys Asp
50 55 60

Tyr Tyr Ala Tyr Arg Leu Gly His Ile Leu Asn Ser Trp Lys Glu Gln
65 70 75 80

Val Glu Ser Lys Thr Val Phe Ser Met Glu Leu Leu Leu Gly Arg Thr
85 90 95

Arg Cys Gly Lys Phe Glu Asp Asp Ile Asp Asn Cys His Phe Gln Glu
100 105 110

Ser Thr Glu Leu Asn Asn Thr Phe Thr Cys Phe Phe Thr Ile Ser Thr
115 120 125

Arg Pro Trp Met Thr Gln Phe Ser Leu Leu Asn Lys Thr Cys Leu Glu
130 135 140

Gly Phe His Xaa
145

<210> 185
<211> 161
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (146)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (151)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (161)
<223> Xaa equals stop translation

<400> 185
Met Arg Leu Leu Cys Gly Leu Trp Leu Trp Leu Ser Leu Leu Lys Val
1 5 10 15

Leu Gln Ala Gln Thr Pro Thr Pro Leu Pro Leu Pro Pro Pro Met Gln
20 25 30

Ser Phe Gln Gly Asn Gln Phe Gln Gly Glu Trp Phe Val Leu Gly Leu
35 40 45

Ala Gly Asn Ser Phe Arg Pro Glu His Arg Ala Leu Leu Asn Ala Phe
50 55 60

Thr Ala Thr Phe Glu Leu Ser Asp Asp Gly Arg Phe Glu Val Trp Asn
65 70 75 80

Ala Met Thr Arg Gly Gln His Cys Asp Thr Trp Ser Tyr Val Leu Ile
85 90 95

```
Pro Ala Ala Gln Pro Gly Gln Phe Thr Val Asp His Gly Val Gly Arg
            100                 105                 110

Ser Trp Leu Leu Pro Pro Gly Thr Leu Asp Gln Phe Ile Cys Leu Gly
        115                 120                 125

Arg Ala Gln Gly Leu Ser Asp Asp Asn Ile Val Phe Pro Asp Val Thr
    130                 135                 140

Gly Xaa Ala Leu Asp Leu Xaa Ser Leu Pro Trp Val Ala Ala Pro Ala
145                 150                 155                 160

Xaa


<210> 186
<211> 122
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (122)
<223> Xaa equals stop translation

<400> 186
Met Met Leu Pro Gln Trp Leu Leu Leu Leu Phe Leu Leu Phe Phe Phe
  1               5                  10                  15

Leu Phe Leu Leu Thr Arg Gly Ser Leu Ser Pro Thr Lys Tyr Asn Leu
             20                  25                  30

Leu Glu Leu Lys Glu Ser Cys Ile Arg Asn Gln Asp Cys Glu Thr Gly
         35                  40                  45

Cys Cys Gln Arg Ala Pro Asp Asn Cys Glu Ser His Cys Ala Glu Lys
     50                  55                  60

Gly Ser Glu Gly Ser Leu Cys Gln Thr Gln Val Phe Phe Gly Gln Tyr
 65                  70                  75                  80

Arg Ala Cys Pro Cys Leu Arg Asn Leu Thr Cys Ile Tyr Ser Lys Asn
                 85                  90                  95

Glu Lys Trp Leu Ser Ile Ala Tyr Gly Arg Cys Gln Lys Ile Gly Arg
            100                 105                 110

Gln Lys Leu Ala Lys Lys Met Phe Phe Xaa
        115                 120


<210> 187
<211> 163
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
```

<222> (163)
<223> Xaa equals stop translation

<400> 187
Met Thr Ser Asn Phe Pro Phe Cys Thr Leu Ile Leu Gly Ile Ala Gln
1 5 10 15

Ala Gln Ala Cys Pro Gly Cys Pro Gly Asp Trp Pro Gly Leu Gly Ser
20 25 30

Gly Val Gly Glu Gly Leu His His Ile Arg Thr Cys Arg Thr Pro Ile
35 40 45

Pro Cys Ser Pro Pro Ala Pro Ala Ala Ala Cys Leu Gly Ser Gly His
50 55 60

Ala Arg Leu Pro Cys Val Leu Arg Leu Trp Pro Val Pro Ala Asn Leu
65 70 75 80

Ser Ser Pro Phe Arg Leu Glu Ala Leu His Cys Ser Phe Trp Ser Ser
85 90 95

Pro Leu Leu Pro Ala Pro His Leu Ala Phe Phe Gly Phe Arg Asp Leu
100 105 110

Leu Thr Asp Phe Leu Leu Ala Ala Cys Leu Leu Thr Phe Gln Lys Thr
115 120 125

Pro Leu Glu Leu Pro Met Ala Val Val His Leu Leu Val Ala Thr Pro
130 135 140

Cys Tyr Gln Met Leu Asp Asn Leu Pro Leu Pro Ser Ala Ala Ala Asn
145 150 155 160

Trp Cys Xaa

<210> 188
<211> 51
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (51)
<223> Xaa equals stop translation

<400> 188
Met Pro Gly Ile Leu Ala Gly Ile Pro Val Lys Asp Leu Cys Leu Ser
1 5 10 15

Leu Leu Gln Gly Phe Arg Leu Leu Leu Leu Cys Val Cys Pro Gly Trp
20 25 30

Leu Ser Gly Trp Met Gly Gly Gln Lys Gly Ser Pro Arg Ile Val Asp
35 40 45

Ile Gly Xaa

50

<210> 189
<211> 65
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (65)
<223> Xaa equals stop translation

<400> 189
Met Tyr Leu Tyr Leu Gly Val Phe Phe His Leu Ile Tyr Pro Gly Ala
1 5 10 15

Leu Ser Ile Thr Thr Leu Gly Lys His Ser His Pro Phe Phe Thr Ala
20 25 30

Glu Gln Asn Ser Thr Val Trp Met Glu His Thr Leu Phe His Gln Ser
35 40 45

Pro Val Ala Ser His Leu Val Cys Phe Gln Ser Phe Ala Phe Ser Glu
50 55 60

Xaa
65

<210> 190
<211> 47
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (47)
<223> Xaa equals stop translation

<400> 190
Met Thr Leu Ser Leu Gln Leu Ala Glu Leu Val His Phe Val Cys Ala
1 5 10 15

Phe Gln Ser Gln Trp Thr Gly Val Tyr Pro Met Met Pro Pro Leu Lys
20 25 30

Pro Thr Glu Pro Leu Cys Phe Ala Cys Val Pro Cys Arg Val Xaa
35 40 45

<210> 191
<211> 144
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (144)

<223> Xaa equals stop translation

<400> 191
Met Ser Pro Phe His Leu Leu Gly Leu Lys Val Phe Leu Thr Trp Ala
1 5 10 15

Leu Thr Leu Ala Gln Ile Cys Leu Tyr Phe Phe Glu Val Gln Pro Leu
20 25 30

Gly Leu Leu Ala Leu Asn Phe Phe Cys Thr Ala Thr Ala Gly Leu Lys
35 40 45

Glu Leu Cys Met His Pro Pro Ser Leu Ala Phe Thr Pro Glu Phe His
50 55 60

Thr Ser Leu Ser Pro Leu Ala Ile Pro Ser Phe Cys Gly Thr Ser Val
65 70 75 80

Ser Leu Ser Asn Ser His Thr Ile Pro Leu Ser Leu Tyr Leu Pro Phe
85 90 95

Pro Ser Lys Ser Arg Met Pro Asp Thr Leu His Leu Leu Val His Ser
100 105 110

Leu Pro Leu Val His Ser Gln Val Leu Pro Val Lys Asp Val Thr Ile
115 120 125

Glu Trp Pro Leu Cys Gln Arg Cys Leu Gly Ser Thr Cys His Gln Xaa
130 135 140

<210> 192
<211> 81
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (76)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (81)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 192
Met Phe Cys Phe Ser Ser Ile Phe Cys Ser His Glu His Thr His Leu
1 5 10 15

Pro Gly Thr Phe Trp Leu Phe Leu Phe Leu Phe Leu Ile Leu Pro Pro
20 25 30

Ser Cys Pro Cys Phe Leu Pro Phe Ser Leu Ala Ile Glu Thr Val Arg
35 40 45

Trp Pro Cys Trp His His Pro Thr Ser Phe Glu Leu Cys Tyr Pro Gly
50 55 60

Thr Ser Ile Tyr Tyr Ala Ser Arg Gly Gly Pro Xaa Pro Asn Ser Glu
65 70 75 80

Xaa

<210> 193
<211> 45
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (45)
<223> Xaa equals stop translation

<400> 193
Met Thr Tyr Leu Phe Cys Ser Ser Ile Ser Leu Leu Leu Leu Lys Val
1 5 10 15

His Ser Ser Gly His Gln Asp Ile Arg Lys Ala Lys Ser Lys Val Pro
20 25 30

Arg Leu Leu Ile Ile Gln Cys Pro Gln Gln Arg Glu Xaa
35 40 45

<210> 194
<211> 42
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (42)
<223> Xaa equals stop translation

<400> 194
Met Pro Thr Ile Trp Val Lys Leu Cys Leu Leu Gln Val Cys His Gly
1 5 10 15

Leu Phe Pro Leu Leu Lys His Trp Ser Gln Pro Met Pro Leu Cys Val
20 25 30

Thr Leu Ala Pro Val Ser Tyr Trp Leu Xaa
35 40

<210> 195
<211> 260
<212> PRT
<213> Homo sapiens

<220>
<221> SITE

<222> (260)
<223> Xaa equals stop translation

<400> 195
Met Gly Thr Ala Ala Leu Gly Pro Val Trp Ala Ala Leu Leu Leu Phe
1 5 10 15

Leu Leu Met Cys Glu Ile Pro Met Val Glu Leu Thr Phe Asp Arg Ala
20 25 30

Val Ala Ser Asp Cys Gln Arg Cys Cys Asp Ser Glu Asp Pro Leu Asp
35 40 45

Pro Ala His Val Ser Ser Ala Ser Ser Ser Gly Arg Pro His Ala Leu
50 55 60

Pro Glu Ile Arg Pro Tyr Ile Asn Ile Thr Ile Leu Lys Gly Asp Lys
65 70 75 80

Gly Asp Pro Gly Pro Met Gly Leu Pro Gly Tyr Met Gly Arg Glu Gly
85 90 95

Pro Gln Gly Glu Pro Gly Pro Gln Gly Ser Lys Gly Asp Lys Gly Glu
100 105 110

Met Gly Ser Pro Gly Ala Pro Cys Gln Lys Arg Phe Phe Ala Phe Ser
115 120 125

Val Gly Arg Lys Thr Ala Leu His Ser Gly Glu Asp Phe Gln Thr Leu
130 135 140

Leu Phe Glu Arg Val Phe Val Asn Leu Asp Gly Cys Phe Asp Met Ala
145 150 155 160

Thr Gly Gln Phe Ala Ala Pro Leu Arg Gly Ile Tyr Phe Phe Ser Leu
165 170 175

Asn Val His Ser Trp Asn Tyr Lys Glu Thr Tyr Val His Ile Met His
180 185 190

Asn Gln Lys Glu Ala Val Ile Leu Tyr Ala Gln Pro Ser Glu Arg Ser
195 200 205

Ile Met Gln Ser Gln Ser Val Met Leu Asp Leu Ala Tyr Gly Asp Arg
210 215 220

Val Trp Val Arg Leu Phe Lys Arg Gln Arg Glu Asn Ala Ile Tyr Ser
225 230 235 240

Asn Asp Phe Asp Thr Tyr Ile Thr Phe Ser Gly His Leu Ile Lys Ala
245 250 255

Glu Asp Asp Xaa
260

<210> 196
<211> 117
<212> PRT

<213> Homo sapiens

<400> 196

```
Met Leu Gly His Cys Cys Tyr Phe Trp Gln Val Trp Pro Ala Ser Glu
  1               5                  10                  15

Ala Leu Ala Ala Gly Pro Thr Pro Ser Thr Gly Ser Ser Ser Pro Ser
             20                  25                  30

Trp Lys Gln His Ile Gly Thr Ser Leu Gln Lys Thr Arg Gly Ser Leu
         35                  40                  45

Pro Thr Thr Thr Leu Thr Ser Gly Ala Gly Gln Ser Thr Ser Thr Gly
     50                  55                  60

Lys Asn Pro Ala Ala Gly Arg Ser Leu Glu Gly Ala Leu Pro Ala Gly
 65                  70                  75                  80

Val Trp Pro Cys Phe Ala Gln Ser Pro Cys Thr Gly Gly Gln Gln Thr
                 85                  90                  95

Pro Ser Ser Thr Gly Leu Arg Ser Cys Leu Val Arg Ser Pro Ala Thr
            100                 105                 110

Trp Trp Arg Thr Pro
        115
```

<210> 197
<211> 698
<212> PRT
<213> Homo sapiens

<400> 197

```
Met Leu Pro Ala Arg Leu Pro Phe Arg Leu Leu Ser Leu Phe Leu Arg
  1               5                  10                  15

Gly Ser Ala Pro Thr Ala Ala Arg His Gly Leu Arg Glu Pro Leu Leu
             20                  25                  30

Glu Arg Arg Cys Ala Ala Ala Ser Ser Phe Gln His Ser Ser Ser Leu
         35                  40                  45

Gly Arg Glu Leu Pro Tyr Asp Pro Val Asp Thr Glu Gly Phe Gly Glu
     50                  55                  60

Gly Gly Asp Met Gln Glu Arg Phe Leu Phe Pro Glu Tyr Ile Leu Asp
 65                  70                  75                  80

Pro Glu Pro Gln Pro Thr Arg Glu Lys Gln Leu Gln Glu Leu Gln Gln
                 85                  90                  95

Gln Gln Glu Glu Glu Glu Arg Gln Arg Gln Gln Arg Arg Glu Glu Arg
            100                 105                 110

Arg Gln Gln Asn Leu Arg Ala Arg Ser Arg Glu His Pro Val Val Gly
        115                 120                 125

His Pro Asp Pro Ala Leu Pro Pro Ser Gly Val Asn Cys Ser Gly Cys
```

130 135 140

Gly Ala Glu Leu His Cys Gln Asp Ala Gly Val Pro Gly Tyr Leu Pro
145 150 155 160

Arg Glu Lys Phe Leu Arg Thr Ala Glu Ala Asp Gly Gly Leu Ala Arg
165 170 175

Thr Val Cys Gln Arg Cys Trp Leu Leu Ser His His Arg Arg Ala Leu
180 185 190

Arg Leu Gln Val Ser Arg Glu Gln Tyr Leu Glu Leu Val Ser Ala Ala
195 200 205

Leu Arg Arg Pro Gly Pro Ser Leu Val Leu Tyr Met Val Asp Leu Leu
210 215 220

Asp Leu Pro Asp Ala Leu Leu Pro Asp Leu Pro Ala Leu Val Gly Pro
225 230 235 240

Lys Gln Leu Ile Val Leu Gly Asn Lys Val Asp Leu Leu Pro Gln Asp
245 250 255

Ala Pro Gly Tyr Arg Gln Arg Leu Arg Glu Arg Leu Trp Glu Asp Cys
260 265 270

Ala Arg Ala Gly Leu Leu Leu Ala Pro Gly His Gln Gly Pro Gln Arg
275 280 285

Pro Val Lys Asp Glu Pro Gln Asp Gly Glu Asn Pro Asn Pro Pro Asn
290 295 300

Trp Ser Arg Thr Val Val Arg Asp Val Arg Leu Ile Ser Ala Lys Thr
305 310 315 320

Gly Tyr Gly Val Glu Glu Leu Ile Ser Ala Leu Gln Arg Ser Trp Arg
325 330 335

Tyr Arg Gly Asp Val Tyr Leu Val Gly Ala Thr Asn Ala Gly Lys Ser
340 345 350

Thr Leu Phe Asn Thr Leu Leu Glu Ser Asp Tyr Cys Thr Ala Lys Gly
355 360 365

Ser Asp Ala Ile Asp Arg Ala Thr Ile Ser Pro Trp Pro Gly Thr Thr
370 375 380

Leu Asn Leu Leu Lys Phe Pro Ile Cys Asn Pro Thr Pro Tyr Arg Met
385 390 395 400

Phe Lys Arg His Gln Arg Leu Lys Lys Asp Ser Thr Gln Ala Glu Glu
405 410 415

Asp Leu Ser Glu Gln Glu Gln Asn Gln Leu Asn Val Leu Lys Lys His
420 425 430

Gly Tyr Val Val Gly Arg Val Gly Arg Thr Phe Leu Tyr Ser Glu Glu
435 440 445

```
Gln Lys Asp Asn Ile Pro Phe Glu Phe Asp Ala Asp Ser Leu Ala Phe
    450                 455                 460

Asp Met Glu Asn Asp Pro Val Met Gly Thr His Lys Ser Thr Lys Gln
465                 470                 475                 480

Val Glu Leu Thr Ala Gln Asp Val Lys Asp Ala His Trp Phe Tyr Asp
                485                 490                 495

Thr Pro Gly Ile Thr Lys Glu Asn Cys Ile Leu Asn Leu Leu Thr Glu
            500                 505                 510

Lys Glu Val Asn Ile Val Leu Pro Thr Gln Ser Ile Val Pro Arg Thr
        515                 520                 525

Phe Val Leu Lys Pro Gly Met Val Leu Phe Leu Gly Ala Ile Gly Arg
    530                 535                 540

Ile Asp Phe Leu Gln Gly Asn Gln Ser Ala Trp Phe Thr Val Val Ala
545                 550                 555                 560

Ser Asn Ile Leu Pro Val His Ile Thr Ser Leu Asp Arg Ala Asp Ala
                565                 570                 575

Leu Tyr Gln Lys His Ala Gly His Thr Leu Leu Gln Ile Pro Met Gly
            580                 585                 590

Gly Lys Glu Arg Met Ala Gly Phe Pro Pro Leu Val Ala Glu Asp Ile
        595                 600                 605

Met Leu Lys Glu Gly Leu Gly Ala Ser Glu Ala Val Ala Asp Ile Lys
    610                 615                 620

Phe Ser Ser Ala Gly Trp Val Ser Val Thr Pro Asn Phe Lys Asp Arg
625                 630                 635                 640

Leu His Leu Arg Gly Tyr Thr Pro Glu Gly Thr Val Leu Thr Val Arg
                645                 650                 655

Pro Pro Leu Leu Pro Tyr Ile Val Asn Ile Lys Gly Gln Arg Ile Lys
            660                 665                 670

Lys Ser Val Ala Tyr Lys Thr Lys Lys Pro Pro Ser Leu Met Tyr Asn
        675                 680                 685

Val Arg Lys Lys Lys Gly Lys Ile Asn Val
    690                 695


<210> 198
<211> 348
<212> PRT
<213> Homo sapiens

<400> 198
Met Asn Met Thr Gln Ala Arg Val Leu Val Ala Ala Val Val Gly Leu
 1               5                  10                  15

Val Ala Val Leu Leu Tyr Ala Ser Ile His Lys Ile Glu Glu Gly His
```

20 25 30

Leu Ala Val Tyr Tyr Arg Gly Gly Ala Leu Leu Thr Ser Pro Ser Gly
35 40 45

Pro Gly Tyr His Ile Met Leu Pro Phe Ile Thr Thr Phe Arg Ser Val
50 55 60

Gln Thr Thr Leu Gln Thr Asp Glu Val Lys Asn Val Pro Cys Gly Thr
65 70 75 80

Ser Gly Gly Val Met Ile Tyr Ile Asp Arg Ile Glu Val Val Asn Met
85 90 95

Leu Ala Pro Tyr Ala Val Phe Asp Ile Val Arg Asn Tyr Thr Ala Asp
100 105 110

Tyr Asp Lys Thr Leu Ile Phe Asn Lys Ile His His Glu Leu Asn Gln
115 120 125

Phe Cys Ser Ala His Thr Leu Gln Glu Val Tyr Ile Glu Leu Phe Asp
130 135 140

Gln Ile Asp Glu Asn Leu Lys Gln Ala Leu Gln Lys Asp Leu Asn Leu
145 150 155 160

Met Ala Pro Gly Leu Thr Ile Gln Ala Val Arg Val Thr Lys Pro Lys
165 170 175

Ile Pro Glu Ala Ile Arg Arg Asn Phe Glu Leu Met Glu Ala Glu Lys
180 185 190

Thr Lys Leu Leu Ile Ala Ala Gln Lys Gln Lys Val Val Glu Lys Glu
195 200 205

Ala Glu Thr Glu Arg Lys Lys Ala Val Ile Glu Ala Glu Lys Ile Ala
210 215 220

Gln Val Ala Lys Ile Arg Phe Gln Gln Lys Val Met Glu Lys Glu Thr
225 230 235 240

Glu Lys Arg Ile Ser Glu Ile Glu Asp Ala Ala Phe Leu Ala Arg Glu
245 250 255

Lys Ala Lys Ala Asp Ala Glu Tyr Tyr Ala Ala His Lys Tyr Ala Thr
260 265 270

Ser Asn Lys His Lys Leu Thr Pro Glu Tyr Leu Glu Leu Lys Lys Tyr
275 280 285

Gln Ala Ile Ala Ser Asn Ser Lys Ile Tyr Phe Gly Ser Asn Ile Pro
290 295 300

Asn Met Phe Val Asp Ser Ser Cys Ala Leu Lys Tyr Ser Asp Ile Arg
305 310 315 320

Thr Gly Arg Glu Ser Ser Leu Pro Ser Lys Glu Ala Leu Glu Pro Ser
325 330 335

Gly Glu Asn Val Ile Gln Asn Lys Glu Ser Thr Gly
340 345

<210> 199
<211> 401
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (307)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 199
Met Met Gly Leu Gly Asn Gly Arg Arg Ser Met Lys Ser Pro Pro Leu
1 5 10 15

Val Leu Ala Ala Leu Val Ala Cys Ile Ile Val Leu Gly Phe Asn Tyr
20 25 30

Trp Ile Ala Ser Ser Arg Ser Val Asp Leu Gln Thr Arg Ile Met Glu
35 40 45

Leu Glu Gly Arg Val Arg Arg Arg Ala Ala Glu Arg Gly Ala Val Glu
50 55 60

Leu Lys Lys Asn Glu Phe Gln Gly Glu Leu Glu Lys Gln Arg Glu Gln
65 70 75 80

Leu Asp Lys Ile Gln Ser Ser His Asn Phe Gln Leu Glu Ser Val Asn
85 90 95

Lys Leu Tyr Gln Asp Glu Lys Ala Val Leu Val Asn Asn Ile Thr Thr
100 105 110

Gly Glu Arg Leu Ile Arg Val Leu Gln Asp Gln Leu Lys Thr Leu Gln
115 120 125

Arg Asn Tyr Gly Arg Leu Gln Gln Asp Val Leu Gln Phe Gln Lys Asn
130 135 140

Gln Thr Asn Leu Glu Arg Lys Phe Ser Tyr Asp Leu Ser Gln Cys Ile
145 150 155 160

Asn Gln Met Lys Glu Val Lys Glu Gln Cys Glu Glu Arg Ile Glu Glu
165 170 175

Val Thr Lys Lys Gly Asn Glu Ala Val Ala Ser Arg Asp Leu Ser Glu
180 185 190

Asn Asn Asp Gln Arg Gln Gln Leu Gln Ala Leu Ser Glu Pro Gln Pro
195 200 205

Arg Leu Gln Ala Ala Gly Leu Pro His Thr Glu Val Pro Gln Gly Lys
210 215 220

Gly Asn Val Leu Gly Asn Ser Lys Ser Gln Thr Pro Ala Pro Ser Ser
225 230 235 240

Glu Val Val Leu Asp Ser Lys Arg Gln Val Glu Lys Glu Glu Thr Asn
245 250 255

Glu Ile Gln Val Val Asn Glu Glu Pro Gln Arg Asp Arg Leu Pro Gln
260 265 270

Glu Pro Gly Arg Glu Gln Val Val Glu Asp Arg Pro Val Gly Gly Arg
275 280 285

Gly Phe Gly Gly Ala Gly Glu Leu Gly Gln Thr Pro Gln Val Gln Ala
290 295 300

Ala Leu Xaa Val Ser Gln Glu Asn Pro Glu Met Glu Gly Pro Glu Arg
305 310 315 320

Asp Gln Leu Val Ile Pro Asp Gly Gln Glu Glu Glu Gln Glu Ala Ala
325 330 335

Gly Glu Gly Arg Asn Gln Gln Lys Leu Arg Gly Glu Asp Asp Tyr Asn
340 345 350

Met Asp Glu Asn Glu Ala Glu Ser Glu Thr Asp Lys Gln Ala Ala Leu
355 360 365

Ala Gly Asn Asp Arg Asn Ile Asp Val Phe Asn Val Glu Asp Gln Lys
370 375 380

Arg Asp Thr Ile Asn Leu Leu Asp Gln Arg Glu Lys Arg Asn His Thr
385 390 395 400

Leu

<210> 200
<211> 324
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (3)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 200
Met Glu Xaa Ala Lys Val Tyr Val Ala Lys Val Asp Cys Thr Ala His
1 5 10 15

Ser Asp Val Cys Ser Ala Gln Gly Val Arg Gly Tyr Pro Thr Leu Lys
20 25 30

Leu Phe Lys Pro Gly Gln Glu Ala Val Lys Tyr Gln Gly Pro Arg Asp
35 40 45

Phe Gln Thr Leu Glu Asn Trp Met Leu Gln Thr Leu Asn Glu Glu Pro
50 55 60

Val Thr Pro Glu Pro Glu Val Glu Pro Pro Ser Ala Pro Glu Leu Lys

65 70 75 80

Gln Gly Leu Tyr Glu Leu Ser Ala Ser Asn Phe Glu Leu His Val Ala
85 90 95

Gln Gly Asp His Phe Ile Lys Phe Phe Ala Pro Trp Cys Gly His Cys
100 105 110

Lys Ala Leu Ala Pro Thr Trp Glu Gln Leu Ala Leu Gly Leu Glu His
115 120 125

Ser Glu Thr Val Lys Ile Gly Lys Val Asp Cys Thr Gln His Tyr Glu
130 135 140

Leu Cys Ser Gly Asn Gln Val Arg Gly Tyr Pro Thr Leu Leu Trp Phe
145 150 155 160

Arg Asp Gly Lys Lys Val Asp Gln Tyr Lys Gly Lys Arg Asp Leu Glu
165 170 175

Ser Leu Arg Glu Tyr Val Glu Ser Gln Leu Gln Arg Thr Glu Thr Gly
180 185 190

Ala Thr Glu Thr Val Thr Pro Ser Glu Ala Pro Val Leu Ala Ala Glu
195 200 205

Pro Glu Ala Asp Lys Gly Thr Val Leu Ala Leu Thr Glu Asn Asn Phe
210 215 220

Asp Asp Thr Ile Ala Glu Gly Ile Thr Phe Ile Lys Phe Tyr Ala Pro
225 230 235 240

Trp Cys Gly His Cys Lys Thr Leu Ala Pro Thr Trp Glu Glu Leu Ser
245 250 255

Lys Lys Glu Phe Pro Gly Leu Ala Gly Val Lys Ile Ala Glu Val Asp
260 265 270

Cys Thr Ala Glu Arg Asn Ile Cys Ser Lys Tyr Ser Val Arg Gly Tyr
275 280 285

Pro Thr Leu Leu Leu Phe Arg Gly Gly Lys Lys Val Ser Glu His Ser
290 295 300

Gly Gly Arg Asp Leu Asp Ser Leu His Arg Phe Val Leu Ser Gln Ala
305 310 315 320

Lys Asp Glu Leu

<210> 201
<211> 90
<212> PRT
<213> Homo sapiens

<400> 201
Met Ala Leu Phe Ser Cys Leu Leu Leu Leu Lys Gln Ser Asp Gly Ala
1 5 10 15

```
Ser Pro Val Leu Arg Ala Leu Ala Ala Ser Cys Leu Ala Ser Pro Ala
            20                  25                  30

Gly Cys Cys Gly Thr Arg Lys Ala Leu Asn Gly Asn Val Gly Glu Lys
        35                  40                  45

Val Gly Phe Thr Phe Met Ser Phe Gln Gly Cys Asp Pro Ser Ser Pro
    50                  55                  60

Gly Cys Leu Cys Cys Ser Leu Leu Pro Ser Asn Ser Gln Leu Val Phe
65                  70                  75                  80

Ile Ser Phe Leu Val Leu Ser Gly Leu Ala
                85                  90


<210> 202
<211> 243
<212> PRT
<213> Homo sapiens

<400> 202
Met Arg Pro Gln Gly Pro Ala Ala Ser Pro Gln Arg Leu Arg Gly Leu
  1               5                  10                  15

Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser Ala Ser Glu
            20                  25                  30

Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg Glu Val Val
        35                  40                  45

Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala Gly Val Pro Gly
    50                  55                  60

Arg Asp Gly Ser Pro Gly Ala Asn Gly Ile Pro Gly Thr Pro Gly Ile
65                  70                  75                  80

Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys Gly Glu Cys Leu Arg Glu
                85                  90                  95

Ser Phe Glu Glu Ser Trp Thr Pro Asn Tyr Lys Gln Cys Ser Trp Ser
            100                 105                 110

Ser Leu Asn Tyr Gly Ile Asp Leu Gly Lys Ile Ala Glu Cys Thr Phe
        115                 120                 125

Thr Lys Met Arg Ser Asn Ser Ala Leu Arg Val Leu Phe Ser Gly Ser
    130                 135                 140

Leu Arg Leu Lys Cys Arg Asn Ala Cys Cys Glu Arg Trp Tyr Phe Thr
145                 150                 155                 160

Phe Asn Gly Ala Glu Cys Ser Gly Pro Leu Pro Ile Glu Ala Ile Ile
                165                 170                 175

Tyr Leu Asp Gln Gly Ser Pro Glu Met Asn Ser Thr Ile Asn Ile His
            180                 185                 190
```

Arg Thr Ser Ser Val Glu Gly Leu Cys Glu Gly Ile Gly Ala Gly Leu
195 200 205

Val Asp Val Ala Ile Trp Val Gly Thr Cys Ser Asp Tyr Pro Lys Gly
210 215 220

Asp Ala Ser Thr Gly Trp Asn Ser Val Ser Arg Ile Ile Ile Glu Glu
225 230 235 240

Leu Pro Lys

<210> 203
<211> 75
<212> PRT
<213> Homo sapiens

<400> 203
Met Ala Gly Gln Glu Asp Pro Val Gln Arg Glu Ile His Gln Asp Trp
1 5 10 15

Ala Asn Arg Glu Tyr Ile Glu Ile Ile Thr Ser Ser Ile Lys Lys Ile
20 25 30

Ala Asp Phe Leu Asn Ser Phe Asp Met Ser Cys Arg Ser Arg Leu Ala
35 40 45

Thr Leu Asn Glu Lys Leu Thr Ala Leu Glu Arg Arg Ile Glu Tyr Ile
50 55 60

Glu Ala Arg Val Thr Lys Gly Glu Thr Leu Thr
65 70 75

<210> 204
<211> 248
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (185)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 204
Met Thr Ser Gln Pro Val Pro Asn Glu Thr Ile Ile Val Leu Pro Ser
1 5 10 15

Asn Val Ile Asn Phe Ser Gln Ala Glu Lys Pro Glu Pro Thr Asn Gln
20 25 30

Gly Gln Asp Ser Leu Lys Lys His Leu His Ala Glu Ile Lys Val Ile
35 40 45

Gly Thr Ile Gln Ile Leu Cys Gly Met Met Val Leu Ser Leu Gly Ile
50 55 60

Ile Leu Ala Ser Ala Ser Phe Ser Pro Asn Phe Thr Gln Val Thr Ser

```
65                  70                  75                  80

Thr Leu Leu Asn Ser Ala Tyr Pro Phe Ile Gly Pro Phe Phe Phe Ile
                85                  90                  95

Ile Ser Gly Ser Leu Ser Ile Ala Thr Glu Lys Arg Leu Thr Lys Leu
            100                 105                 110

Leu Val His Ser Ser Leu Val Gly Ser Ile Leu Ser Ala Leu Ser Ala
        115                 120                 125

Leu Val Gly Phe Ile Ile Leu Ser Val Lys Gln Ala Thr Leu Asn Pro
    130                 135                 140

Ala Ser Leu Gln Cys Glu Leu Asp Lys Asn Asn Ile Pro Thr Arg Ser
145                 150                 155                 160

Tyr Val Ser Tyr Phe Tyr His Asp Ser Leu Tyr Thr Thr Asp Cys Tyr
                165                 170                 175

Thr Ala Lys Ala Ser Leu Ala Gly Xaa Leu Ser Leu Met Leu Ile Cys
            180                 185                 190

Thr Leu Leu Glu Phe Cys Leu Ala Val Leu Thr Ala Val Leu Arg Trp
        195                 200                 205

Lys Gln Ala Tyr Ser Asp Phe Pro Gly Ser Val Leu Phe Leu Pro His
    210                 215                 220

Ser Tyr Ile Gly Asn Ser Gly Met Ser Ser Lys Met Thr His Asp Cys
225                 230                 235                 240

Gly Tyr Glu Glu Leu Leu Thr Ser
                245


<210> 205
<211> 168
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (83)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 205
Met Pro Leu Leu Arg Gly Leu Leu Trp Leu Gln Val Leu Cys Ala Gly
  1               5                  10                  15

Pro Leu His Thr Glu Ala Val Val Leu Leu Val Pro Ser Asp Asp Gly
            20                  25                  30

Arg Ala Phe Leu Leu Arg Ser Arg Leu Leu His Pro Glu Ala His Val
        35                  40                  45

Pro Pro Ala Ala Asp Arg Gly Ala Ser Leu Gln Cys Val Leu His Gln
    50                  55                  60
```

Ala Ala Pro Lys Ser Arg Pro Arg Ser Pro Ala Ala Gly Ala Ala Leu
65 70 75 80

Leu His Xaa Pro Arg Arg Thr Gly Asp Glu Pro Cys Arg Glu Phe His
85 90 95

Gly Asn Gly Phe Pro Gly Pro Thr Gln Leu Thr Pro Gly Glu Cys Gly
100 105 110

Leu Pro Ala Pro Ser Ser Leu Leu Gln His Ala Ser Ala Pro Val Arg
115 120 125

Thr Gly Ser Glu Gly Gln Val Val Gly Cys Pro Arg Ala Arg Gly Glu
130 135 140

Thr Gly Glu Gly Leu Ser Leu Ala Phe Leu Ser Ser Leu Met Phe Thr
145 150 155 160

Ser Arg Asn Gly Leu Val Gly Cys
165

<210> 206
<211> 218
<212> PRT
<213> Homo sapiens

<400> 206
Met Gly Ser Ala Ala Leu Glu Ile Leu Gly Leu Val Leu Cys Leu Val
1 5 10 15

Gly Trp Gly Gly Leu Ile Leu Ala Cys Gly Leu Pro Met Trp Gln Val
20 25 30

Thr Ala Phe Leu Asp His Asn Ile Val Thr Ala Gln Thr Thr Trp Lys
35 40 45

Gly Leu Trp Met Ser Cys Val Val Gln Ser Thr Gly His Met Gln Cys
50 55 60

Lys Val Tyr Asp Ser Val Leu Ala Leu Ser Thr Glu Val Gln Ala Ala
65 70 75 80

Arg Ala Leu Thr Val Ser Ala Val Leu Leu Ala Phe Val Ala Leu Phe
85 90 95

Val Thr Leu Ala Gly Ala Gln Cys Thr Thr Cys Val Ala Pro Gly Pro
100 105 110

Ala Lys Ala Arg Val Ala Leu Thr Gly Gly Val Leu Tyr Leu Phe Cys
115 120 125

Gly Leu Leu Ala Leu Val Pro Leu Cys Trp Phe Ala Asn Ile Val Val
130 135 140

Arg Glu Phe Tyr Asp Pro Ser Val Pro Val Ser Gln Lys Tyr Glu Leu
145 150 155 160

Gly Ala Ala Leu Tyr Ile Gly Trp Ala Ala Thr Ala Leu Leu Met Val

```
                165                 170                 175

Gly Gly Cys Leu Leu Cys Cys Gly Ala Trp Val Cys Thr Gly Arg Pro
            180                 185                 190

Asp Leu Ser Phe Pro Val Lys Tyr Ser Ala Pro Arg Arg Pro Thr Ala
        195                 200                 205

Thr Gly Asp Tyr Asp Lys Lys Asn Tyr Val
    210                 215


<210> 207
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (73)
<223> Xaa equals stop translation

<400> 207
Met Thr Ser Tyr Ile Leu Ile Ser Phe Val Leu Leu Ile Gly Val Gly
  1               5                  10                  15

Cys Ile Glu Lys Asp Gln Ser Cys Pro Val Phe Gly Gly Arg Lys Arg
             20                  25                  30

Leu His Leu Leu Phe Val Gly Gly Gln Leu Arg Gln Val Arg Met Leu
         35                  40                  45

Arg Gly Glu Leu Ser Cys Ala Cys Tyr Arg Pro His Val Gln Ala Leu
     50                  55                  60

Gln Leu Gly Gly Cys Thr Cys Phe Xaa
 65                  70


<210> 208
<211> 348
<212> PRT
<213> Homo sapiens

<400> 208
Met Leu Cys Pro Trp Arg Thr Ala Asn Leu Gly Leu Leu Leu Ile Leu
  1               5                  10                  15

Thr Ile Phe Leu Val Ala Glu Ala Glu Gly Ala Ala Gln Pro Asn Asn
             20                  25                  30

Ser Leu Met Leu Gln Thr Ser Lys Glu Asn His Ala Leu Ala Ser Ser
         35                  40                  45

Ser Leu Cys Met Asp Glu Lys Gln Ile Thr Gln Asn Tyr Ser Lys Val
     50                  55                  60

Leu Ala Glu Val Asn Thr Ser Trp Pro Val Lys Met Ala Thr Asn Ala
 65                  70                  75                  80
```

Val Leu Cys Cys Pro Pro Ile Ala Leu Arg Asn Leu Ile Ile Ile Thr
85 90 95

Trp Glu Ile Ile Leu Arg Gly Gln Pro Ser Cys Thr Lys Ala Tyr Lys
100 105 110

Lys Glu Thr Asn Glu Thr Lys Glu Thr Asn Cys Thr Asp Glu Arg Ile
115 120 125

Thr Trp Val Ser Arg Pro Asp Gln Asn Ser Asp Leu Gln Ile Arg Thr
130 135 140

Val Ala Ile Thr His Asp Gly Tyr Tyr Arg Cys Ile Met Val Thr Pro
145 150 155 160

Asp Gly Asn Phe His Arg Gly Tyr His Leu Gln Val Leu Val Thr Pro
165 170 175

Glu Val Thr Leu Phe Gln Asn Arg Asn Arg Thr Ala Val Cys Lys Ala
180 185 190

Val Ala Gly Lys Pro Ala Ala His Ile Ser Trp Ile Pro Glu Gly Asp
195 200 205

Cys Ala Thr Lys Gln Glu Tyr Trp Ser Asn Gly Thr Val Thr Val Lys
210 215 220

Ser Thr Cys His Trp Glu Val His Asn Val Ser Thr Val Asn Cys His
225 230 235 240

Val Ser His Leu Thr Gly Asn Lys Ser Leu Tyr Ile Glu Leu Leu Pro
245 250 255

Val Pro Gly Ala Lys Lys Ser Ala Lys Leu Tyr Ile Pro Tyr Ile Ile
260 265 270

Leu Thr Ile Ile Ile Leu Thr Ile Val Gly Phe Ile Trp Leu Leu Lys
275 280 285

Val Asn Gly Cys Arg Lys Tyr Lys Leu Asn Lys Thr Glu Ser Thr Pro
290 295 300

Val Val Glu Glu Asp Glu Met Gln Pro Tyr Ala Ser Tyr Thr Glu Lys
305 310 315 320

Asn Asn Pro Leu Tyr Asp Thr Thr Asn Lys Val Lys Ala Ser Glu Ala
325 330 335

Leu Gln Ser Glu Val Asp Thr Asp Leu His Thr Leu
340 345

<210> 209
<211> 73
<212> PRT
<213> Homo sapiens

<220>

<221> SITE
<222> (73)
<223> Xaa equals stop translation

<400> 209
Met Ala Arg Gly Cys Val Cys Ser Leu Cys Ala Ser Val Cys Ile Phe
1 5 10 15

Leu Ser Ser Leu Phe Pro Leu Leu Pro Ser Val His Ser Val Asn Ile
20 25 30

Ile Ser Cys Leu Leu Leu Ser Lys Cys Phe Glu Gly Leu Glu Leu Met
35 40 45

Cys Glu His Leu Tyr Gln Leu Ser Gln Leu His Val Leu His His Ile
50 55 60

Phe Ser Tyr Leu Leu Cys Thr Pro Xaa
65 70

<210> 210
<211> 608
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (265)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (597)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 210
Met Val Gly Thr Lys Leu Arg Gln Thr Lys Asp Ala Leu Phe Thr Ile
1 5 10 15

Leu His Asp Leu Arg Pro Gln Asp Arg Phe Ser Ile Ile Gly Phe Ser
20 25 30

Asn Arg Ile Lys Val Trp Lys Asp His Leu Ile Ser Val Thr Pro Asp
35 40 45

Ser Ile Arg Asp Gly Lys Val Tyr Ile His His Met Ser Pro Thr Gly
50 55 60

Gly Thr Asp Ile Asn Gly Val Leu Gln Arg Ala Ile Arg Leu Leu Asn
65 70 75 80

Lys Tyr Val Ala His Ser Gly Ile Gly Asp Arg Ser Val Ser Leu Ile
85 90 95

Val Phe Leu Thr Asp Gly Lys Pro Thr Val Gly Glu Thr His Thr Leu
100 105 110

Lys Ile Leu Asn Asn Thr Arg Glu Ala Ala Arg Gly Gln Val Cys Ile

115 120 125

Phe Thr Ile Gly Ile Gly Asn Asp Val Asp Phe Arg Leu Leu Glu Lys
130 135 140

Leu Ser Leu Glu Asn Cys Gly Leu Thr Arg Arg Val His Glu Glu Glu
145 150 155 160

Asp Ala Gly Ser Gln Leu Ile Gly Phe Tyr Asp Glu Ile Arg Thr Pro
165 170 175

Leu Leu Ser Asp Ile Arg Ile Asp Tyr Pro Pro Ser Ser Val Val Gln
180 185 190

Ala Thr Lys Thr Leu Phe Pro Asn Tyr Phe Asn Gly Ser Glu Ile Ile
195 200 205

Ile Ala Gly Lys Leu Val Asp Arg Lys Leu Asp His Leu His Val Glu
210 215 220

Val Thr Ala Ser Asn Ser Lys Lys Phe Ile Ile Leu Lys Thr Asp Val
225 230 235 240

Pro Val Arg Pro Gln Lys Ala Gly Lys Asp Val Thr Gly Ser Pro Arg
245 250 255

Pro Gly Gly Asp Gly Glu Gly Asp Xaa Asn His Ile Glu Arg Leu Trp
260 265 270

Ser Tyr Leu Thr Thr Lys Glu Leu Leu Ser Ser Trp Leu Gln Ser Asp
275 280 285

Asp Glu Pro Glu Lys Glu Arg Leu Arg Gln Arg Ala Gln Ala Leu Ala
290 295 300

Val Ser Tyr Arg Phe Leu Thr Pro Phe Thr Ser Met Lys Leu Arg Gly
305 310 315 320

Pro Val Pro Arg Met Asp Gly Leu Glu Glu Ala His Gly Met Ser Ala
325 330 335

Ala Met Gly Pro Glu Pro Val Val Gln Ser Val Arg Gly Ala Gly Thr
340 345 350

Gln Pro Gly Pro Leu Leu Lys Lys Pro Tyr Gln Pro Arg Ile Lys Ile
355 360 365

Ser Lys Thr Ser Val Asp Gly Asp Pro His Phe Val Val Asp Phe Pro
370 375 380

Leu Ser Arg Leu Thr Val Cys Phe Asn Ile Asp Gly Gln Pro Gly Asp
385 390 395 400

Ile Leu Arg Leu Val Ser Asp His Arg Asp Ser Gly Val Thr Val Asn
405 410 415

Gly Glu Leu Ile Gly Ala Pro Ala Pro Pro Asn Gly His Lys Lys Gln
420 425 430

```
Arg Thr Tyr Leu Arg Thr Ile Thr Ile Leu Ile Asn Lys Pro Glu Arg
        435                 440                 445

Ser Tyr Leu Glu Ile Thr Pro Ser Arg Val Ile Leu Asp Gly Gly Asp
    450                 455                 460

Arg Leu Val Leu Pro Cys Asn Gln Ser Val Val Val Gly Ser Trp Gly
465                 470                 475                 480

Leu Glu Val Ser Val Ser Ala Asn Ala Asn Val Thr Val Thr Ile Gln
                485                 490                 495

Gly Ser Ile Ala Phe Val Ile Leu Ile His Leu Tyr Lys Lys Pro Ala
            500                 505                 510

Pro Phe Gln Arg His His Leu Gly Phe Tyr Ile Ala Asn Ser Glu Gly
        515                 520                 525

Leu Ser Ser Asn Cys His Gly Leu Leu Gly Gln Phe Leu Asn Gln Asp
    530                 535                 540

Ala Arg Leu Thr Glu Asp Pro Ala Gly Pro Ser Gln Asn Leu Thr His
545                 550                 555                 560

Pro Leu Leu Leu Gln Val Gly Glu Gly Pro Glu Ala Val Leu Thr Val
                565                 570                 575

Lys Gly His Gln Val Pro Val Val Trp Lys Gln Arg Lys Ile Tyr Asn
            580                 585                 590

Gly Glu Glu Gln Xaa Asp Cys Trp Phe Ala Arg Asn Met Pro Pro Asn
        595                 600                 605


<210> 211
<211> 252
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (252)
<223> Xaa equals stop translation

<400> 211
Met Ala Pro Ala Ser Arg Leu Leu Ala Leu Trp Ala Leu Ala Ala Val
  1               5                  10                  15

Ala Leu Pro Gly Ser Gly Ala Glu Gly Asp Gly Gly Trp Arg Pro Gly
             20                  25                  30

Gly Pro Gly Ala Val Ala Glu Glu Glu Arg Cys Thr Val Glu Arg Arg
         35                  40                  45

Ala Asp Leu Thr Tyr Ala Glu Phe Val Gln Gln Tyr Ala Phe Val Arg
     50                  55                  60
```

Pro Val Ile Leu Gln Gly Leu Thr Asp Asn Ser Arg Phe Arg Ala Leu
65 70 75 80

Cys Ser Arg Asp Arg Leu Leu Ala Ser Phe Gly Asp Arg Val Val Arg
85 90 95

Leu Ser Thr Ala Asn Thr Tyr Ser Tyr His Lys Val Asp Leu Pro Phe
100 105 110

Gln Glu Tyr Val Glu Gln Leu Leu His Pro Gln Asp Pro Thr Ser Leu
115 120 125

Gly Asn Asp Thr Leu Tyr Phe Phe Gly Asp Asn Asn Phe Thr Glu Trp
130 135 140

Ala Ser Leu Phe Arg His Tyr Ser Pro Pro Pro Phe Gly Leu Leu Gly
145 150 155 160

Thr Ala Pro Ala Tyr Ser Phe Gly Ile Ala Gly Ala Gly Ser Gly Val
165 170 175

Pro Phe His Trp His Gly Pro Gly Tyr Ser Glu Val Ile Tyr Gly Arg
180 185 190

Lys Arg Trp Phe Leu Tyr Pro Pro Glu Lys Thr Pro Glu Phe His Pro
195 200 205

Asn Lys Thr Thr Leu Ala Trp Leu Arg Asp Thr Tyr Pro Ala Cys Thr
210 215 220

Val Cys Thr Ala Leu Glu Cys Thr Ile Arg Ala Gly Glu Val Leu Thr
225 230 235 240

Ser Arg Pro Leu Val Ala Cys Tyr Ala Gln Pro Xaa
245 250

<210> 212
<211> 226
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (226)
<223> Xaa equals stop translation

<400> 212
Met Lys Glu Ile Pro Ala Leu Leu His Leu Pro Val Leu Ile Ile Met
1 5 10 15

Ala Leu Ala Ile Leu Ser Phe Cys Tyr Gly Ala Gly Lys Ser Val His
20 25 30

Val Leu Arg His Ile Gly Gly Pro Glu Arg Glu Pro Pro Gln Ala Leu
35 40 45

Arg Pro Arg Asp Arg Arg Arg Gln Glu Glu Ile Asp Tyr Arg Pro Asp

```
                50                  55                  60

Gly Gly Ala Gly Asp Ala Asp Phe His Tyr Arg Gly Gln Met Gly Pro
 65                  70                  75                  80

Thr Glu Gln Gly Pro Tyr Ala Lys Thr Tyr Glu Gly Arg Arg Glu Ile
                 85                  90                  95

Leu Arg Glu Arg Asp Val Asp Leu Arg Phe Gln Thr Gly Asn Lys Ser
            100                 105                 110

Pro Glu Val Leu Arg Ala Phe Asp Val Pro Asp Ala Glu Ala Arg Glu
        115                 120                 125

His Pro Thr Val Val Pro Ser His Lys Ser Pro Val Leu Asp Thr Lys
    130                 135                 140

Pro Lys Glu Thr Gly Gly Ile Leu Gly Glu Gly Thr Pro Lys Glu Ser
145                 150                 155                 160

Ser Thr Glu Ser Ser Gln Ser Ala Lys Pro Val Ser Gly Gln Asp Thr
                165                 170                 175

Ser Gly Asn Thr Glu Gly Ser Pro Ala Ala Glu Lys Ala Gln Leu Lys
            180                 185                 190

Ser Glu Ala Ala Gly Ser Pro Asp Gln Gly Ser Thr Tyr Ser Pro Ala
        195                 200                 205

Arg Gly Val Ala Gly Pro Arg Gly Gln Asp Pro Val Ser Ser Pro Cys
    210                 215                 220

Gly Xaa
225


<210> 213
<211> 51
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (51)
<223> Xaa equals stop translation

<400> 213
Met Met Gly Leu Leu Glu Thr Gly Asn Val Leu Phe Trp Val Trp Val
  1               5                  10                  15

Val Val Thr Cys Val Tyr Ser Leu Tyr Ala Asn Ser Leu Asn Cys Thr
             20                  25                  30

Asp Met Asp Cys Ala Pro Phe Tyr Met Cys Val Met Leu Gln Gln Lys
        35                  40                  45

Cys Gln Xaa
    50
```

<210> 214
<211> 172
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (172)
<223> Xaa equals stop translation

<400> 214
```
Met Trp Leu Trp Ala Val Ser Pro Val Arg Pro Arg Thr Cys Leu Pro
  1               5                  10                  15

Pro Cys Pro Arg Leu Trp Leu Trp Ile Ser Met Thr Leu Val Pro Ser
             20                  25                  30

Ser Ser Ala Trp Lys Ser His Gly Ala Pro Ser Thr Arg Met Thr Ser
         35                  40                  45

Pro Gln Leu Leu Leu Leu Ser Thr Arg Pro Pro Gln Ser Pro Ser Ala
     50                  55                  60

Ser Pro Pro Ile Ala Arg Ala His Arg Thr His Pro His Phe Gly Asn
 65                  70                  75                  80

Arg Leu Ser Ile Thr Cys Cys Asp Gly Arg Arg Ser Trp Arg Met Gly
                 85                  90                  95

Gln His Gly Pro Cys His Leu Asn Leu Gln Thr Thr His Pro Ala His
            100                 105                 110

Ser Ser Gln Ala Leu Pro Ala Thr His Gln Pro Leu Gly Pro Trp Cys
        115                 120                 125

Ser Ser Pro Ser Pro Phe Pro Ser Lys Leu Pro Ser Ala Gly Leu Arg
    130                 135                 140

Pro Pro Ala Leu Gly Pro Trp Met Arg Arg Gly Pro Trp Pro Gln Ser
145                 150                 155                 160

Trp Gln Met Gly Met His Pro Thr Val Gly Leu Xaa
                165                 170
```

<210> 215
<211> 48
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (48)
<223> Xaa equals stop translation

<400> 215
```
Met Trp Leu Leu Ile Ile Phe Cys Lys Ser Ala Ser Ala Ser Val Leu
  1               5                  10                  15
```

Cys Trp Ile Lys Lys Phe His Pro Val Phe Gln Glu Ser Leu Leu Tyr
20 25 30

Leu Val Gln Glu Gly Ser Leu Cys Tyr Val Gln Gln Lys Val Pro Xaa
35 40 45

<210> 216
<211> 139
<212> PRT
<213> Homo sapiens

<400> 216
Met Glu Ala Val Val Phe Val Phe Ser Leu Leu Asp Cys Cys Ala Leu
1 5 10 15

Ile Phe Leu Ser Val Tyr Phe Ile Ile Thr Leu Ser Asp Leu Glu Cys
20 25 30

Asp Tyr Ile Asn Ala Arg Ser Cys Cys Ser Lys Leu Asn Lys Trp Val
35 40 45

Ile Pro Glu Leu Ile Gly His Thr Ile Val Thr Val Leu Leu Leu Met
50 55 60

Ser Leu His Trp Phe Ile Phe Leu Leu Asn Leu Pro Val Ala Thr Trp
65 70 75 80

Asn Ile Tyr Arg Tyr Ile Met Val Pro Ser Gly Asn Met Gly Val Phe
85 90 95

Asp Pro Thr Glu Ile His Asn Arg Gly Gln Leu Lys Ser His Met Lys
100 105 110

Glu Ala Met Ile Lys Leu Gly Phe His Leu Leu Cys Phe Phe Met Tyr
115 120 125

Leu Tyr Ser Met Ile Leu Ala Leu Ile Asn Asp
130 135

<210> 217
<211> 41
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (41)
<223> Xaa equals stop translation

<400> 217
Met Ser Gly Ser Ser Leu Pro Ser Ala Leu Ala Leu Ser Leu Leu Leu
1 5 10 15

Val Ser Gly Ser Leu Leu Pro Gly Pro Gly Ala Ala Gln Asn Val Arg
20 25 30

Val Gln Ser Gly Gln Asp Gln Lys Xaa
35 40

<210> 218
<211> 52
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (52)
<223> Xaa equals stop translation

<400> 218
Met Pro Ser His Ile Arg Ala His Leu Phe Leu Leu Leu Phe Phe Leu
1 5 10 15

Phe Ile Tyr Gln Gly Ile Ser Ser Ile Ser Gln Ala Ser Gly Leu Thr
20 25 30

Leu Lys Thr Gln Asn Glu Lys Asp Ile Gln Val Ser Ile Leu Lys Glu
35 40 45

Phe Val Val Xaa
50

<210> 219
<211> 49
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (49)
<223> Xaa equals stop translation

<400> 219
Met Cys Ile Tyr Gln Ser Glu Gln Met Leu Ala Leu Leu Leu Val Leu
1 5 10 15

Val Phe Cys Ile Ser Leu Leu Val Leu Val Cys Trp Gly Ser His Asn
20 25 30

Lys Val Pro Gln Lys Phe Ile Phe Ser Gln Phe Trp Gly Leu Glu Asp
35 40 45

Xaa

<210> 220
<211> 42
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (42)
<223> Xaa equals stop translation

<400> 220
Met Ala Val Pro Leu Phe Leu Tyr Ile Phe Thr Leu Leu Pro Leu Leu
1 5 10 15

Pro Phe Leu Leu Ser Leu Cys Phe Ser Pro Leu Thr Val Lys Arg Ser
20 25 30

Ser Ser Ser Glu Ser Lys Ser Ser Leu Xaa
35 40

<210> 221
<211> 41
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (41)
<223> Xaa equals stop translation

<400> 221
Met Gly Met Leu Leu Ala Phe Trp Leu Pro Gly Ala Ser Trp Gln Glu
1 5 10 15

Ala Gly Pro Arg Ala Ser Thr Gln Arg Met Arg Thr Gln Thr Gln Met
20 25 30

Ser Thr Arg Lys Pro Lys Pro Ala Xaa
35 40

<210> 222
<211> 43
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (43)
<223> Xaa equals stop translation

<400> 222
Met Glu Pro Ala Met Val Leu Lys Phe Leu Ser Ser Leu Pro Glu Asn
1 5 10 15

Leu Phe Leu Pro Ser Leu Leu Phe Phe Ala Trp Leu Cys Trp Asn Met
20 25 30

Val Cys Gly Ser Pro Val Ser Cys Pro Tyr Xaa
35 40

<210> 223
<211> 204
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (204)
<223> Xaa equals stop translation

<400> 223
Met Gln Leu Gly Ser Val Leu Leu Thr Arg Cys Pro Phe Trp Gly Cys
1 5 10 15

Phe Ser Gln Leu Met Leu Tyr Ala Glu Arg Ala Glu Ala Arg Arg Lys
20 25 30

Pro Asp Ile Pro Val Pro Tyr Leu Tyr Phe Asp Met Gly Ala Ala Val
35 40 45

Leu Cys Ala Ser Phe Met Ser Phe Gly Val Lys Arg Arg Trp Phe Ala
50 55 60

Leu Gly Ala Ala Leu Gln Leu Ala Ile Ser Thr Tyr Ala Ala Tyr Ile
65 70 75 80

Gly Gly Tyr Val His Tyr Gly Asp Trp Leu Lys Val Arg Met Tyr Ser
85 90 95

Arg Thr Val Ala Ile Ile Gly Gly Phe Leu Val Leu Ala Ser Gly Ala
100 105 110

Gly Glu Leu Tyr Arg Arg Lys Pro Arg Ser Arg Ser Leu Gln Ser Thr
115 120 125

Gly Gln Val Phe Leu Gly Ile Tyr Leu Ile Cys Val Ala Tyr Ser Leu
130 135 140

Gln His Ser Lys Glu Asp Arg Leu Ala Tyr Leu Asn His Leu Pro Gly
145 150 155 160

Gly Glu Leu Met Ile Gln Leu Phe Phe Val Leu Tyr Gly Ile Leu Ala
165 170 175

Pro Gly Leu Ser Val Arg Leu Leu Arg Asp Pro Arg Cys Pro Asp Pro
180 185 190

Gly Cys Thr Ala Ala Pro Cys His Ala Ala His Xaa
195 200

<210> 224
<211> 43
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (43)

<223> Xaa equals stop translation

<400> 224
Met Arg Val Arg Ile Gly Leu Thr Leu Leu Leu Cys Ala Val Leu Leu
1 5 10 15

Ser Leu Ala Ser Ala Ser Ser Asp Glu Glu Gly Ser Gln Asp Glu Ser
20 25 30

Leu Gly Phe Gln Asp Tyr Phe Asp Ile Arg Xaa
35 40

<210> 225
<211> 156
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (156)
<223> Xaa equals stop translation

<400> 225
Met Ala Arg Gly Ser Leu Arg Arg Leu Leu Arg Leu Leu Val Leu Gly
1 5 10 15

Leu Trp Leu Ala Leu Leu Arg Ser Val Ala Gly Glu Gln Ala Pro Gly
20 25 30

Thr Ala Pro Cys Ser Arg Gly Ser Ser Trp Ser Ala Asp Leu Asp Lys
35 40 45

Cys Met Asp Cys Ser Thr Ser Cys Pro Leu Pro Ala Ala Leu Ala His
50 55 60

Pro Trp Gly Arg Ser Glu Pro Asp Leu Arg Ala Gly Ala Ala Phe Trp
65 70 75 80

Leu Phe Gly Leu Glu Thr Met Pro Gln Glu Arg Glu Val His His Pro
85 90 95

His Arg Gly Asp Arg Arg Arg Gly Leu Pro Ser Cys Gly Ala Asp Pro
100 105 110

Val Thr Met Cys Pro Leu Pro Ala Gly Ala Arg Pro Leu Ile Ile His
115 120 125

Ser Ser Ile Leu Glu Pro Val Ser Ala Ser Gln Thr Arg Arg Glu Pro
130 135 140

Ser Ser Ser Asn His Lys Gly Gly Gly Gly Arg Xaa
145 150 155

<210> 226
<211> 74
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (38)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (48)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (54)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (55)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (68)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (74)
<223> Xaa equals stop translation

<400> 226
```
Met Phe Tyr Lys Leu Thr Leu Ile Leu Cys Glu Leu Ser Val Ala Gly
  1               5                  10                  15

Val Thr Gln Ala Ala Ser Gln Arg Pro Leu Gln Arg Leu Pro Arg His
             20                  25                  30

Ile Cys Ser Gln Arg Xaa Pro Pro Gly Arg Cys Leu Leu Lys Ala Xaa
         35                  40                  45

Leu Gln Thr Thr Trp Xaa Xaa Pro Asp Lys Pro Ile Pro Arg Leu Ser
     50                  55                  60

Pro Pro Leu Xaa Ser Asp Pro Lys Arg Xaa
 65                  70
```

<210> 227
<211> 167
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (167)
<223> Xaa equals stop translation

<400> 227

Met Gly Ser Arg Phe Leu Leu Val Leu Leu Ser Gly Leu Thr Val Leu
1 5 10 15

Leu Ala Leu Pro Gly Ser Glu Ala Lys Asn Ser Gly Ala Ser Cys Pro
20 25 30

Pro Cys Pro Lys Tyr Ala Ser Cys His Asn Ser Thr His Cys Thr Cys
35 40 45

Glu Asp Gly Phe Arg Ala Arg Ser Gly Arg Thr Tyr Phe His Asp Ser
50 55 60

Ser Glu Lys Cys Glu Asp Ile Asn Glu Cys Glu Thr Gly Leu Ala Lys
65 70 75 80

Cys Lys Tyr Lys Ala Tyr Cys Arg Asn Lys Val Gly Gly Tyr Ile Cys
85 90 95

Ser Cys Leu Val Lys Tyr Thr Leu Phe Asn Phe Leu Ala Gly Ile Ile
100 105 110

Asp Tyr Asp His Pro Asp Cys Tyr Glu Asn Asn Ser Gln Gly Thr Thr
115 120 125

Gln Ser Asn Val Asp Ile Trp Val Ser Gly Val Lys Pro Gly Phe Gly
130 135 140

Lys Gln Leu Val Arg Ile Thr Met Pro Phe Ser Tyr Pro Asn Ile Asn
145 150 155 160

Met Ser Ser Cys Asp Phe Xaa
165

<210> 228
<211> 71
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (71)
<223> Xaa equals stop translation

<400> 228
Met Lys Pro Lys His Leu Glu Trp Cys Leu Ala His Ser Trp Cys Val
1 5 10 15

Ile Trp Leu Ser Phe Val Ser Pro Pro Thr Ser His Leu Glu Cys Asp
20 25 30

Gly Phe Pro Gly Ser Leu Leu Pro Pro Cys Glu Glu Gly Arg Cys Phe
35 40 45

Pro Phe Thr Phe His His His Asp Cys His Gly Cys Ser Pro Leu Gln
50 55 60

Ser Ser Pro Gly Gln His Xaa
65 70

<210> 229
<211> 273
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (273)
<223> Xaa equals stop translation

<400> 229
Met Cys Cys Trp Pro Leu Leu Leu Leu Trp Gly Leu Leu Pro Gly Thr
1   5   10   15

Ala Ala Gly Gly Ser Gly Arg Thr Tyr Pro His Arg Thr Leu Leu Asp
            20   25   30

Ser Glu Gly Lys Tyr Trp Leu Gly Trp Ser Gln Arg Gly Ser Gln Ile
        35   40   45

Ala Phe Arg Leu Gln Val Arg Thr Ala Gly Tyr Val Gly Phe Gly Phe
    50   55   60

Ser Pro Thr Gly Ala Met Ala Ser Ala Asp Ile Val Val Gly Gly Val
65   70   75   80

Ala His Gly Arg Pro Tyr Leu Gln Asp Tyr Phe Thr Asn Ala Asn Arg
                85   90   95

Glu Leu Lys Lys Asp Ala Gln Gln Asp Tyr His Leu Glu Tyr Ala Met
            100   105   110

Glu Asn Ser Thr His Thr Ile Ile Glu Phe Thr Arg Glu Leu His Thr
        115   120   125

Cys Asp Ile Asn Asp Lys Ser Ile Thr Asp Ser Thr Val Arg Val Ile
    130   135   140

Trp Ala Tyr His His Glu Asp Ala Gly Glu Ala Gly Pro Lys Tyr His
145   150   155   160

Asp Ser Asn Arg Gly Thr Lys Ser Leu Arg Leu Leu Asn Pro Glu Lys
                165   170   175

Thr Ser Val Leu Ser Thr Ala Leu Pro Tyr Phe Asp Leu Val Asn Gln
            180   185   190

Asp Val Pro Ile Pro Asn Lys Asp Thr Thr Tyr Trp Cys Gln Met Phe
        195   200   205

Lys Ile Pro Val Phe Gln Glu Lys His His Val Ile Lys Val Glu Pro
    210   215   220

Val Ile Gln Arg Gly His Glu Ser Leu Val His His Ile Leu Leu Tyr
225   230   235   240

Gln Cys Ser Asn Asn Phe Asn Asp Ser Val Pro Gly Ile Arg Ala Arg

245 250 255

Ile Ala Ile Thr Pro Thr Cys Pro Met His Ser Ser Pro Val Lys Leu
260 265 270

Xaa

<210> 230
<211> 82
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (82)
<223> Xaa equals stop translation

<400> 230
Met Arg Pro Gly Thr Ala Leu Gln Ala Val Leu Leu Ala Val Leu Leu
1 5 10 15

Val Gly Leu Arg Ala Ala Thr Gly Arg Leu Leu Ser Gly Gln Pro Val
20 25 30

Cys Arg Gly Gly Thr Gln Arg Pro Cys Tyr Lys Val Ile Tyr Phe His
35 40 45

Asp Thr Ser Arg Arg Leu Asn Phe Glu Glu Ala Lys Glu Ala Cys Arg
50 55 60

Arg Gly Trp Arg Pro Ala Ser Gln His Arg Val Leu Lys Met Asn Arg
65 70 75 80

Asn Xaa

<210> 231
<211> 71
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (38)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 231
Met Ser Pro Leu Ser Ala Ala Arg Ala Ala Leu Arg Val Tyr Ala Val
1 5 10 15

Gly Ala Ala Val Ile Leu Ala Gln Leu Leu Arg Arg Cys Arg Gly Gly
20 25 30

Phe Leu Glu Pro Val Xaa Pro Pro Arg Pro Asp Arg Val Ala Ile Val
35 40 45

```
Thr Gly Gly Thr Asp Gly Ile Gly Tyr Ser Thr Ala Asn Ile Trp Arg
     50                  55                  60

Asp Leu Ala Cys Met Leu Ser
65                  70


<210> 232
<211> 225
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (5)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 232
His Glu Arg Ala Xaa Gly Pro Ser Arg Gly His Gly Glu Leu Leu Ser
1               5                   10                  15

Cys Val Leu Gly Pro Arg Leu Tyr Lys Ile Tyr Arg Glu Arg Asp Ser
            20                  25                  30

Glu Arg Ala Pro Ala Ser Val Pro Glu Thr Pro Thr Ala Val Thr Ala
        35                  40                  45

Pro His Ser Ser Ser Trp Asp Thr Tyr Tyr Gln Pro Arg Ala Leu Glu
    50                  55                  60

Lys His Ala Asp Ser Ile Leu Ala Leu Ala Ser Val Phe Trp Ser Ile
65                  70                  75                  80

Ser Tyr Tyr Ser Ser Pro Phe Ala Phe Phe Tyr Leu Tyr Arg Lys Gly
                85                  90                  95

Tyr Leu Ser Leu Ser Lys Val Val Pro Phe Ser His Tyr Ala Gly Thr
            100                 105                 110

Leu Leu Leu Leu Leu Ala Gly Val Ala Cys Ser Glu Ala Leu Ala Ala
        115                 120                 125

Gly Pro Thr Pro Ser Thr Gly Ser Ser Ser Pro Ser Trp Lys Gln His
    130                 135                 140

Ile Gly Thr Ser Leu Gln Lys Thr Arg Gly Ser Leu Pro Thr Thr Thr
145                 150                 155                 160

Leu Thr Ser Gly Ala Gly Gln Ser Thr Ser Thr Gly Lys Asn Pro Ala
                165                 170                 175

Ala Gly Arg Ser Leu Glu Gly Ala Leu Pro Ala Gly Val Trp Pro Cys
            180                 185                 190

Phe Ala Gln Ser Pro Cys Thr Gly Gly Gln Gln Thr Pro Ser Ser Thr
        195                 200                 205

Gly Leu Arg Ser Cys Leu Val Arg Ser Pro Ala Thr Trp Trp Arg Thr
    210                 215                 220
```

Pro
225

<210> 233
<211> 314
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (147)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (211)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 233
Met Leu Pro Ala Arg Leu Pro Phe Arg Leu Leu Ser Leu Phe Leu Arg
1 5 10 15

Gly Ser Ala Pro Thr Ala Ala Arg His Gly Leu Arg Glu Pro Leu Leu
20 25 30

Glu Arg Arg Cys Ala Ala Ala Ser Ser Phe Gln His Ser Ser Ser Leu
35 40 45

Gly Arg Glu Leu Pro Tyr Asp Pro Val Asp Thr Glu Gly Phe Gly Glu
50 55 60

Gly Gly Asp Met Gln Glu Arg Phe Leu Phe Pro Glu Tyr Ile Leu Asp
65 70 75 80

Pro Glu Pro Gln Pro Thr Arg Glu Lys Gln Leu Gln Glu Leu Gln Gln
85 90 95

Gln Gln Glu Glu Glu Glu Arg Gln Arg Gln Gln Arg Arg Glu Glu Arg
100 105 110

Arg Gln Gln Asn Leu Arg Ala Arg Ser Arg Glu His Pro Val Val Gly
115 120 125

His Pro Asp Pro Ala Leu Pro Pro Ser Gly Val Asn Cys Ser Gly Cys
130 135 140

Gly Ala Xaa Leu His Cys Gln Asp Ala Gly Val Pro Gly Tyr Leu Pro
145 150 155 160

Arg Glu Lys Phe Leu Arg Thr Ala Glu Ala Asp Gly Gly Leu Ala Arg
165 170 175

Thr Val Cys Gln Arg Cys Trp Leu Leu Ser His His Arg Arg Ala Leu
180 185 190

Arg Leu Gln Val Ser Arg Glu Gln Tyr Leu Glu Leu Val Ser Ala Ala
195 200 205

Leu Arg Xaa Pro Gly Pro Ser Leu Val Leu Tyr Met Val Asp Leu Leu
210 215 220

Asp Leu Pro Asp Ala Leu Leu Pro Asp Leu Pro Ala Leu Val Gly Pro
225 230 235 240

Lys Gln Leu Ile Val Leu Gly Asn Lys Val Asp Leu Leu Pro Gln Asp
245 250 255

Ala Pro Gly Tyr Arg Gln Arg Leu Arg Glu Arg Leu Trp Glu Asp Cys
260 265 270

Ala Arg Ala Gly Leu Leu Leu Ala Pro Gly Thr Lys Gly His Ser Ala
275 280 285

Pro Ser Arg Thr Ser His Arg Thr Gly Arg Ile Arg Ile Arg Arg Thr
290 295 300

Gly Pro Ala Gln Trp Ser Gly Thr Cys Gly
305 310

<210> 234
<211> 93
<212> PRT
<213> Homo sapiens

<400> 234
Met Arg Pro Gln Gly Pro Ala Ala Ser Pro Gln Arg Leu Arg Gly Leu
1 5 10 15

Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser Ala Ser Glu
20 25 30

Ile Pro Lys Gly Lys Gln Lys Ala His Ser Gly Arg Gly Arg Trp Trp
35 40 45

Thr Cys Ile Met Glu Cys Ala Tyr Lys Gly Gln Gln Glu Cys Leu Val
50 55 60

Glu Thr Gly Ala Leu Gly Pro Met Ala Phe Arg Val His Leu Gly Ser
65 70 75 80

Gln Val Gly Met Asp Ser Lys Glu Lys Arg Gly Asn Val
85 90

<210> 235
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (73)
<223> Xaa equals stop translation

<400> 235

Met Gly Ser Ala Ala Leu Glu Ile Leu Gly Leu Val Leu Cys Leu Val
1 5 10 15

Gly Trp Gly Gly Leu Ile Leu Ala Cys Gly Leu Pro Met Trp Gln Val
20 25 30

Thr Ala Phe Leu Asp His Asn Ile Val Thr Ala Gln Thr Thr Trp Lys
35 40 45

Gly Leu Trp Met Ser Cys Val Val Gln Ser Thr Gly Thr Cys Ser Ala
50 55 60

Lys Cys Thr Thr Arg Cys Trp Leu Xaa
65 70

<210> 236
<211> 349
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (283)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (293)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (325)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (326)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (349)
<223> Xaa equals stop translation

<400> 236
Met Leu Cys Pro Trp Arg Thr Ala Asn Leu Gly Leu Leu Leu Ile Leu
1 5 10 15

Thr Ile Phe Leu Val Ala Glu Ala Glu Gly Ala Ala Gln Pro Asn Asn
20 25 30

Ser Leu Met Leu Gln Thr Ser Lys Glu Asn His Ala Leu Ala Ser Ser
35 40 45

Ser Leu Cys Met Asp Glu Lys Gln Ile Thr Gln Asn Tyr Ser Lys Val
50 55 60

```
Leu Ala Glu Val Asn Thr Ser Trp Pro Val Lys Met Ala Thr Asn Ala
 65                 70                  75                  80

Val Leu Cys Cys Pro Pro Ile Ala Leu Arg Asn Leu Ile Ile Ile Thr
                 85                  90                  95

Trp Glu Ile Ile Leu Arg Gly Gln Pro Ser Cys Thr Lys Ala Tyr Lys
            100                 105                 110

Lys Glu Thr Asn Glu Thr Lys Glu Thr Asn Cys Thr Asp Glu Arg Ile
        115                 120                 125

Thr Trp Val Ser Arg Pro Asp Gln Asn Ser Asp Leu Gln Ile Arg Thr
    130                 135                 140

Val Ala Ile Thr His Asp Gly Tyr Tyr Arg Cys Ile Met Val Thr Pro
145                 150                 155                 160

Asp Gly Asn Phe His Arg Gly Tyr His Leu Gln Val Leu Val Thr Pro
                165                 170                 175

Glu Val Thr Leu Phe Gln Asn Arg Asn Arg Thr Ala Val Cys Lys Ala
            180                 185                 190

Val Ala Gly Lys Pro Ala Ala His Ile Ser Trp Ile Pro Glu Gly Asp
        195                 200                 205

Cys Ala Thr Lys Gln Glu Tyr Trp Ser Asn Gly Thr Val Thr Val Lys
    210                 215                 220

Ser Thr Cys His Trp Glu Val His Asn Val Ser Thr Val Asn Cys His
225                 230                 235                 240

Val Ser His Leu Thr Gly Asn Lys Ser Leu Tyr Ile Glu Leu Leu Pro
                245                 250                 255

Val Pro Gly Ala Lys Lys Ser Ser Lys Leu Tyr Ile Pro Tyr Ile Ile
            260                 265                 270

Leu Thr Ile Ile Ile Leu Thr Ile Val Gly Xaa Ile Trp Leu Leu Lys
        275                 280                 285

Val Asn Gly Cys Xaa Lys Tyr Lys Leu Asn Lys Pro Glu Ser Thr Pro
    290                 295                 300

Val Val Glu Glu Asp Glu Met Gln Pro Tyr Ala Phe Tyr Thr Glu Lys
305                 310                 315                 320

Asn Asn Pro Leu Xaa Xaa Thr Thr Asn Lys Val Lys Ala Ser Glu Ala
                325                 330                 335

Leu Gln Ser Glu Val Asp Thr Asp Leu His Thr Leu Xaa
            340                 345
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<210> 237
<211> 17
<212> PRT
<213> Homo sapiens

<400> 237
Leu Ala Leu Tyr Ser Ala Leu Phe Ser Tyr Ser Gly Trp Asp Thr Leu
1 5 10 15

Asn

<210> 238
<211> 14
<212> PRT
<213> Homo sapiens

<400> 238
Val Thr Glu Glu Ile Lys Asn Pro Glu Arg Asn Leu Pro Leu
1 5 10

<210> 239
<211> 9
<212> PRT
<213> Homo sapiens

<400> 239
Ile Gly Ile Ser Met Pro Ile Val Thr
1 5

<210> 240
<211> 13
<212> PRT
<213> Homo sapiens

<400> 240
Ile Tyr Ile Leu Thr Asn Val Ala Tyr Tyr Thr Val Leu
1 5 10

<210> 241
<211> 11
<212> PRT
<213> Homo sapiens

<400> 241
Ser Asp Ala Val Ala Val Thr Phe Ala Asp Gln
1 5 10

<210> 242
<211> 13
<212> PRT
<213> Homo sapiens

<400> 242
Val Ala Leu Ser Cys Phe Gly Gly Leu Asn Ala Ser Ile
1 5 10

<210> 243
<211> 15
<212> PRT
<213> Homo sapiens

<400> 243
Ser Arg Leu Phe Phe Val Gly Ser Arg Glu Gly His Leu Pro Asp
1 5 10 15

<210> 244
<211> 11
<212> PRT
<213> Homo sapiens

<400> 244
Ser Phe Ser Tyr Trp Phe Phe Val Gly Leu Ser
1 5 10

<210> 245
<211> 11
<212> PRT
<213> Homo sapiens

<400> 245
Val Gly Gln Leu Tyr Leu Arg Trp Lys Glu Pro
1 5 10

<210> 246
<211> 16
<212> PRT
<213> Homo sapiens

<400> 246
Arg Pro Arg Pro Leu Lys Leu Ser Val Phe Phe Pro Ile Val Phe Cys
1 5 10 15

<210> 247
<211> 9
<212> PRT
<213> Homo sapiens

<400> 247
Asp Thr Ile Asn Ser Leu Ile Gly Ile
1 5

<210> 248
<211> 44
<212> PRT
<213> Homo sapiens

<400> 248

Ala Thr Ala Leu Pro Pro Lys Ile Val Gly Ser Ala Thr Arg Tyr Leu
1   5   10   15

Gln Val Leu Cys Met Ser Val Ala Ala Glu Met Asp Leu Glu Asp Gly
            20   25   30

Gly Glu Met Pro Lys Gln Arg Asp Pro Lys Ser Asn
        35   40

<210> 249
<211> 352
<212> PRT
<213> Homo sapiens

<400> 249
Leu Leu Ala Ala Ala Cys Ile Cys Leu Leu Thr Phe Ile Asn Cys Ala
1   5   10   15

Tyr Val Lys Trp Gly Thr Leu Val Gln Asp Ile Phe Thr Tyr Ala Lys
            20   25   30

Val Leu Ala Leu Ile Ala Val Ile Val Ala Gly Ile Val Arg Leu Gly
        35   40   45

Gln Gly Ala Ser Thr His Phe Glu Asn Ser Phe Glu Gly Ser Ser Phe
    50   55   60

Ala Val Gly Asp Ile Ala Leu Ala Leu Tyr Ser Ala Leu Phe Ser Tyr
65   70   75   80

Ser Gly Trp Asp Thr Leu Asn Tyr Val Thr Glu Glu Ile Lys Asn Pro
                85   90   95

Glu Arg Asn Leu Pro Leu Ser Ile Gly Ile Ser Met Pro Ile Val Thr
            100   105   110

Ile Ile Tyr Ile Leu Thr Asn Val Ala Tyr Tyr Thr Val Leu Asp Met
        115   120   125

Arg Asp Ile Leu Ala Ser Asp Ala Val Ala Val Thr Phe Ala Asp Gln
    130   135   140

Ile Phe Gly Ile Phe Asn Trp Ile Ile Pro Leu Ser Val Ala Leu Ser
145   150   155   160

Cys Phe Gly Gly Leu Asn Ala Ser Ile Val Ala Ala Ser Arg Leu Phe
                165   170   175

Phe Val Gly Ser Arg Glu Gly His Leu Pro Asp Ala Ile Cys Met Ile
            180   185   190

His Val Glu Arg Phe Thr Pro Val Pro Ser Leu Leu Phe Asn Gly Ile
        195   200   205

Met Ala Leu Ile Tyr Leu Cys Val Glu Asp Ile Phe Gln Leu Ile Asn
    210   215   220

Tyr Tyr Ser Phe Ser Tyr Trp Phe Phe Val Gly Leu Ser Ile Val Gly

```
225                 230                 235                 240

Gln Leu Tyr Leu Arg Trp Lys Glu Pro Asp Arg Pro Arg Pro Leu Lys
                245                 250                 255

Leu Ser Val Phe Phe Pro Ile Val Phe Cys Leu Cys Thr Ile Phe Leu
            260                 265                 270

Val Ala Val Pro Leu Tyr Ser Asp Thr Ile Asn Ser Leu Ile Gly Ile
        275                 280                 285

Ala Ile Ala Leu Ser Gly Leu Pro Phe Tyr Phe Leu Ile Ile Arg Val
    290                 295                 300

Pro Glu His Lys Arg Pro Leu Tyr Leu Arg Arg Ile Val Gly Ser Ala
305                 310                 315                 320

Thr Arg Tyr Leu Gln Val Leu Cys Met Ser Val Ala Ala Glu Met Asp
                325                 330                 335

Leu Glu Asp Gly Gly Glu Met Pro Lys Gln Arg Asp Pro Lys Ser Asn
            340                 345                 350
```

<210> 250
<211> 119
<212> PRT
<213> Homo sapiens

<400> 250

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Ala Ala Arg Gly Ser Gly Val Arg Asp Pro Leu Glu Glu Ala Val Cys
 1               5                  10                  15

Pro Phe Ser Asp Leu Gln Leu His Ala Gly Arg Thr Thr Ala Leu Phe
            20                  25                  30

Lys Ala Val Arg Gln Gly His Leu Ser Leu Gln Arg Leu Leu Leu Ser
        35                  40                  45

Phe Val Cys Leu Cys Pro Ala Pro Arg Gly Gly Ala Tyr Arg Gly Arg
    50                  55                  60

Gln Ala Ser Leu Ser Cys Gly Gly Leu His Pro Val Arg Ala Ser Arg
65                  70                  75                  80

Leu Leu Cys Leu Pro Lys Gln Ala Trp Ala Met Ala Gly Ala Pro Pro
                85                  90                  95

Pro Val Ser Leu Pro Pro Cys Ser Leu Ile Ser Asp Cys Cys Ala Ser
            100                 105                 110

Asn Gln Arg Asp Ser Val Gly
        115
```

<210> 251

<211> 356
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (37)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (280)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 251

```
Leu Ser Lys Ala Phe Leu Asp Ser Pro Asn Arg Leu Leu Ala Val Glu
  1               5                  10                  15

Met Asn Thr Asp His Leu Arg Leu Thr Val Pro Asn Gly Ile Gly Ala
             20                  25                  30

Leu Lys Leu Arg Xaa Met Glu His Tyr Phe Ser Gln Gly Leu Ser Val
         35                  40                  45

Gln Leu Phe Asn Asp Gly Ser Lys Gly Lys Leu Asn His Leu Cys Gly
     50                  55                  60

Ala Asp Phe Val Lys Ser His Gln Lys Pro Pro Gln Gly Met Glu Ile
 65                  70                  75                  80

Lys Ser Asn Glu Arg Cys Cys Ser Phe Asp Gly Asp Ala Asp Arg Ile
                 85                  90                  95

Val Tyr Tyr Tyr His Asp Ala Asp Gly His Phe His Leu Ile Asp Gly
            100                 105                 110

Asp Lys Ile Ala Thr Leu Ile Ser Ser Phe Leu Lys Glu Leu Leu Val
        115                 120                 125

Glu Ile Gly Glu Ser Leu Asn Ile Gly Val Val Gln Thr Ala Tyr Ala
    130                 135                 140

Asn Gly Ser Ser Thr Arg Tyr Leu Glu Glu Val Met Lys Val Pro Val
145                 150                 155                 160

Tyr Cys Thr Lys Thr Gly Val Lys His Leu His His Lys Ala Gln Glu
                165                 170                 175

Phe Asp Ile Gly Val Tyr Phe Glu Ala Asn Gly His Gly Thr Ala Leu
            180                 185                 190

Phe Ser Thr Ala Val Glu Met Lys Ile Lys Gln Ser Ala Glu Gln Leu
        195                 200                 205

Glu Asp Lys Lys Arg Lys Ala Ala Lys Met Leu Glu Asn Ile Ile Asp
    210                 215                 220

Leu Phe Asn Gln Ala Ala Gly Asp Ala Ile Ser Asp Met Leu Val Ile
225                 230                 235                 240
```

Glu Ala Ile Leu Ala Leu Lys Gly Leu Thr Val Gln Gln Trp Asp Ala
245 250 255

Leu Tyr Thr Asp Leu Pro Asn Arg Gln Leu Lys Val Gln Val Ala Asp
260 265 270

Arg Arg Val Ile Ser Thr Thr Xaa Ala Glu Arg Gln Ala Val Thr Pro
275 280 285

Pro Gly Leu Gln Glu Ala Ile Asn Asp Leu Val Lys Lys Tyr Lys Leu
290 295 300

Ser Arg Ala Phe Val Arg Pro Ser Gly Thr Glu Asp Val Val Arg Val
305 310 315 320

Tyr Ala Glu Ala Asp Ser Gln Glu Ser Ala Asp His Leu Ala His Glu
325 330 335

Val Ser Leu Ala Val Phe Gln Leu Ala Gly Gly Ile Gly Glu Arg Pro
340 345 350

Gln Pro Gly Phe
355

<210> 252
<211> 26
<212> PRT
<213> Homo sapiens

<400> 252
Leu Ser Lys Ala Phe Leu Asp Ser Pro Asn Arg Leu Leu Ala Val Glu
1 5 10 15

Met Asn Thr Asp His Leu Arg Leu Thr Val
20 25

<210> 253
<211> 28
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (11)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 253
Pro Asn Gly Ile Gly Ala Leu Lys Leu Arg Xaa Met Glu His Tyr Phe
1 5 10 15

Ser Gln Gly Leu Ser Val Gln Leu Phe Asn Asp Gly
20 25

<210> 254
<211> 28

<212> PRT
<213> Homo sapiens

<400> 254
Ser Lys Gly Lys Leu Asn His Leu Cys Gly Ala Asp Phe Val Lys Ser
1 5 10 15

His Gln Lys Pro Pro Gln Gly Met Glu Ile Lys Ser
20 25

<210> 255
<211> 28
<212> PRT
<213> Homo sapiens

<400> 255
Asn Glu Arg Cys Cys Ser Phe Asp Gly Asp Ala Asp Arg Ile Val Tyr
1 5 10 15

Tyr Tyr His Asp Ala Asp Gly His Phe His Leu Ile
20 25

<210> 256
<211> 28
<212> PRT
<213> Homo sapiens

<400> 256
Asp Gly Asp Lys Ile Ala Thr Leu Ile Ser Ser Phe Leu Lys Glu Leu
1 5 10 15

Leu Val Glu Ile Gly Glu Ser Leu Asn Ile Gly Val
20 25

<210> 257
<211> 28
<212> PRT
<213> Homo sapiens

<400> 257
Val Gln Thr Ala Tyr Ala Asn Gly Ser Ser Thr Arg Tyr Leu Glu Glu
1 5 10 15

Val Met Lys Val Pro Val Tyr Cys Thr Lys Thr Gly
20 25

<210> 258
<211> 28
<212> PRT
<213> Homo sapiens

<400> 258
Val Lys His Leu His His Lys Ala Gln Glu Phe Asp Ile Gly Val Tyr
1 5 10 15

Phe Glu Ala Asn Gly His Gly Thr Ala Leu Phe Ser
20 25

<210> 259
<211> 28
<212> PRT
<213> Homo sapiens

<400> 259
Thr Ala Val Glu Met Lys Ile Lys Gln Ser Ala Glu Gln Leu Glu Asp
1 5 10 15

Lys Lys Arg Lys Ala Ala Lys Met Leu Glu Asn Ile
20 25

<210> 260
<211> 28
<212> PRT
<213> Homo sapiens

<400> 260
Ile Asp Leu Phe Asn Gln Ala Ala Gly Asp Ala Ile Ser Asp Met Leu
1 5 10 15

Val Ile Glu Ala Ile Leu Ala Leu Lys Gly Leu Thr
20 25

<210> 261
<211> 28
<212> PRT
<213> Homo sapiens

<400> 261
Val Gln Gln Trp Asp Ala Leu Tyr Thr Asp Leu Pro Asn Arg Gln Leu
1 5 10 15

Lys Val Gln Val Ala Asp Arg Arg Val Ile Ser Thr
20 25

<210> 262
<211> 28
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (2)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 262
Thr Xaa Ala Glu Arg Gln Ala Val Thr Pro Pro Gly Leu Gln Glu Ala
1 5 10 15

Ile Asn Asp Leu Val Lys Lys Tyr Lys Leu Ser Arg
20 25

<210> 263
<211> 24
<212> PRT
<213> Homo sapiens

<400> 263
Ala Phe Val Arg Pro Ser Gly Thr Glu Asp Val Val Arg Val Tyr Ala
1 5 10 15

Glu Ala Asp Ser Gln Glu Ser Ala
20

<210> 264
<211> 26
<212> PRT
<213> Homo sapiens

<400> 264
Asp His Leu Ala His Glu Val Ser Leu Ala Val Phe Gln Leu Ala Gly
1 5 10 15

Gly Ile Gly Glu Arg Pro Gln Pro Gly Phe
20 25

<210> 265
<211> 443
<212> PRT
<213> Homo sapiens

<400> 265
Gly Thr Arg Ala Ala Pro Gly Leu Gly Ala Trp Gly Arg Arg Ser Pro
1 5 10 15

Pro Ser Phe Ser Pro Pro Arg Pro Arg Arg Pro Gly Val Met Ala Gly
20 25 30

Leu Asn Cys Gly Val Ser Ile Ala Leu Leu Gly Val Leu Leu Leu Gly
35 40 45

Ala Ala Arg Leu Pro Arg Gly Ala Glu Ala Phe Glu Ile Ala Leu Pro
50 55 60

Arg Glu Ser Asn Ile Thr Val Leu Ile Lys Leu Gly Thr Pro Thr Leu
65 70 75 80

Leu Ala Lys Pro Cys Tyr Ile Val Ile Ser Lys Arg His Ile Thr Met
85 90 95

Leu Ser Ile Lys Ser Gly Glu Arg Ile Val Phe Thr Phe Ser Cys Gln
100 105 110

Ser Pro Glu Asn His Phe Val Ile Glu Ile Gln Lys Asn Ile Asp Cys
115 120 125

Met Ser Gly Pro Cys Pro Phe Gly Glu Val Gln Leu Gln Pro Ser Thr

130 135 140

Ser Leu Leu Pro Thr Leu Asn Arg Thr Phe Ile Trp Asp Val Lys Ala
145 150 155 160

His Lys Ser Ile Gly Leu Glu Leu Gln Phe Ser Ile Pro Arg Leu Arg
165 170 175

Gln Ile Gly Pro Gly Glu Ser Cys Pro Asp Gly Val Thr His Ser Ile
180 185 190

Ser Gly Arg Ile Asp Ala Thr Val Val Arg Ile Gly Thr Phe Cys Ser
195 200 205

Asn Gly Thr Val Ser Arg Ile Lys Met Gln Glu Gly Val Lys Met Ala
210 215 220

Leu His Leu Pro Trp Phe His Pro Arg Asn Val Ser Gly Phe Ser Ile
225 230 235 240

Ala Asn Arg Ser Ser Ile Lys Arg Leu Cys Ile Ile Glu Ser Val Phe
245 250 255

Glu Gly Glu Gly Ser Ala Thr Leu Met Ser Ala Asn Tyr Pro Glu Gly
260 265 270

Phe Pro Glu Asp Glu Leu Met Thr Trp Gln Phe Val Val Pro Ala His
275 280 285

Leu Arg Ala Ser Val Ser Phe Leu Asn Phe Asn Leu Ser Asn Cys Glu
290 295 300

Arg Lys Glu Glu Arg Val Glu Tyr Tyr Ile Pro Gly Ser Thr Thr Asn
305 310 315 320

Pro Glu Val Phe Lys Leu Glu Asp Lys Gln Pro Gly Asn Met Ala Gly
325 330 335

Asn Phe Asn Leu Ser Leu Gln Gly Cys Asp Gln Asp Ala Gln Ser Pro
340 345 350

Gly Ile Leu Arg Leu Gln Phe Gln Val Leu Val Gln His Pro Gln Asn
355 360 365

Glu Ser Asn Lys Ile Tyr Val Val Asp Leu Ser Asn Glu Arg Ala Met
370 375 380

Ser Leu Thr Ile Glu Pro Arg Pro Val Lys Gln Ser Arg Lys Phe Val
385 390 395 400

Pro Gly Cys Phe Val Cys Leu Glu Ser Arg Thr Cys Ser Ser Asn Leu
405 410 415

Thr Leu Thr Ser Gly Ser Lys His Lys Ile Ser Phe Leu Cys Asp Asp
420 425 430

Leu Thr Arg Leu Trp Met Asn Val Glu Lys Pro
435 440

<210> 266
<211> 159
<212> PRT
<213> Homo sapiens

<400> 266

```
Phe Glu Ile Ala Leu Pro Arg Glu Ser Asn Ile Thr Val Leu Ile Lys
1               5                   10                  15

Leu Gly Thr Pro Thr Leu Leu Ala Lys Pro Cys Tyr Ile Val Ile Ser
            20                  25                  30

Lys Arg His Ile Thr Met Leu Ser Ile Lys Ser Gly Glu Arg Ile Val
        35                  40                  45

Phe Thr Phe Ser Cys Gln Ser Pro Glu Asn His Phe Val Ile Glu Ile
    50                  55                  60

Gln Lys Asn Ile Asp Cys Met Ser Gly Pro Cys Pro Phe Gly Glu Val
65                  70                  75                  80

Gln Leu Gln Pro Ser Thr Ser Leu Leu Pro Thr Leu Asn Arg Thr Phe
                85                  90                  95

Ile Trp Asp Val Lys Ala His Lys Ser Ile Gly Leu Glu Leu Gln Phe
            100                 105                 110

Ser Ile Pro Arg Leu Arg Gln Ile Gly Pro Gly Glu Ser Cys Pro Asp
        115                 120                 125

Gly Val Thr His Ser Ile Ser Gly Arg Ile Asp Ala Thr Val Val Arg
    130                 135                 140

Ile Gly Thr Phe Cys Ser Asn Gly Thr Val Ser Arg Ile Lys Met
145                 150                 155
```

<210> 267
<211> 9
<212> PRT
<213> Homo sapiens

<400> 267

```
Phe Val Arg Asp Pro Phe Val Arg Leu
1               5
```

<210> 268
<211> 13
<212> PRT
<213> Homo sapiens

<400> 268

```
Phe Leu Phe Val Arg Asp Pro Phe Val Arg Leu Ile Ser
1               5                   10
```

<210> 269

```
<211> 15
<212> PRT
<213> Homo sapiens

<400> 269
Phe Leu Phe Val Arg Asp Pro Phe Val Arg Leu Ile Ser Ala Phe
1               5                   10                  15


<210> 270
<211> 380
<212> PRT
<213> Homo sapiens

<400> 270
Tyr Leu His Thr Ser Phe Ser Arg Pro His Thr Gly Pro Pro Leu Pro
1               5                   10                  15

Thr Pro Gly Pro Asp Arg Asp Arg Glu Leu Thr Ala Asp Ser Asp Val
            20                  25                  30

Asp Glu Phe Leu Asp Lys Phe Leu Ser Ala Gly Val Lys Gln Ser Asp
        35                  40                  45

Leu Pro Arg Lys Glu Thr Glu Gln Pro Pro Ala Pro Gly Ser Met Glu
    50                  55                  60

Glu Asn Val Arg Gly Tyr Asp Trp Ser Pro Arg Asp Ala Arg Arg Ser
65                  70                  75                  80

Pro Asp Gln Gly Arg Gln Gln Ala Glu Arg Arg Ser Val Leu Arg Gly
                85                  90                  95

Phe Cys Ala Asn Ser Ser Leu Ala Phe Pro Thr Lys Glu Arg Ala Phe
            100                 105                 110

Asp Asp Ile Pro Asn Ser Glu Leu Ser His Leu Ile Val Asp Asp Arg
        115                 120                 125

His Gly Ala Ile Tyr Cys Tyr Val Pro Lys Val Ala Cys Thr Asn Trp
    130                 135                 140

Lys Arg Val Met Ile Val Leu Ser Gly Ser Leu Leu His Arg Gly Ala
145                 150                 155                 160

Pro Tyr Arg Asp Pro Leu Arg Ile Pro Arg Glu His Val His Asn Ala
                165                 170                 175

Ser Ala His Leu Thr Phe Asn Lys Phe Trp Arg Arg Tyr Gly Lys Leu
            180                 185                 190

Ser Arg His Leu Met Lys Val Lys Leu Lys Lys Tyr Thr Lys Phe Leu
        195                 200                 205

Phe Val Arg Asp Pro Phe Val Arg Leu Ile Ser Ala Phe Arg Ser Lys
    210                 215                 220

Phe Glu Leu Glu Asn Glu Glu Phe Tyr Arg Lys Phe Ala Val Pro Met
225                 230                 235                 240
```

```
Leu Arg Leu Tyr Ala Asn His Thr Ser Leu Pro Ala Ser Ala Arg Glu
                245                 250                 255

Ala Phe Arg Ala Gly Leu Lys Val Ser Phe Ala Asn Phe Ile Gln Tyr
            260                 265                 270

Leu Leu Asp Pro His Thr Glu Lys Leu Ala Pro Phe Asn Glu His Trp
        275                 280                 285

Arg Gln Val Tyr Arg Leu Cys His Pro Cys Gln Ile Asp Tyr Asp Phe
    290                 295                 300

Val Gly Lys Leu Glu Thr Leu Asp Glu Asp Ala Ala Gln Leu Leu Gln
305                 310                 315                 320

Leu Leu Gln Val Asp Arg Gln Leu Arg Phe Pro Pro Ser Tyr Arg Asn
                325                 330                 335

Arg Thr Ala Ser Ser Trp Glu Glu Asp Trp Phe Ala Lys Ile Pro Leu
            340                 345                 350

Ala Trp Arg Gln Gln Leu Tyr Lys Leu Tyr Glu Ala Asp Phe Val Leu
        355                 360                 365

Phe Gly Tyr Pro Lys Pro Glu Asn Leu Leu Arg Asp
    370                 375                 380


<210> 271
<211> 274
<212> PRT
<213> Homo sapiens

<400> 271
Lys Leu Val Arg Leu Gln Val Pro Val Arg Asn Ser Arg Val Asp Pro
 1               5                  10                  15

Arg Val Arg Ser Lys Ile Gly Ser Arg Arg Trp Met Leu Gln Leu Ile
            20                  25                  30

Met Gln Leu Gly Ser Val Leu Leu Thr Arg Cys Pro Phe Trp Gly Cys
        35                  40                  45

Phe Ser Gln Leu Met Leu Tyr Ala Glu Arg Ala Glu Ala Arg Arg Lys
    50                  55                  60

Pro Asp Ile Pro Val Pro Tyr Leu Tyr Phe Asp Met Gly Ala Ala Val
65                  70                  75                  80

Leu Cys Ala Ser Phe Met Ser Phe Gly Val Lys Arg Arg Trp Phe Ala
                85                  90                  95

Leu Gly Ala Ala Leu Gln Leu Ala Ile Ser Thr Tyr Ala Ala Tyr Ile
            100                 105                 110

Gly Gly Tyr Val His Tyr Gly Asp Trp Leu Lys Val Arg Met Tyr Ser
        115                 120                 125
```

```
Arg Thr Val Ala Ile Ile Gly Gly Phe Leu Val Leu Ala Ser Gly Ala
    130                 135                 140

Gly Glu Leu Tyr Arg Arg Lys Pro Arg Ser Arg Ser Leu Gln Ser Thr
145                 150                 155                 160

Gly Gln Val Phe Leu Gly Ile Tyr Leu Ile Cys Val Ala Tyr Ser Leu
                165                 170                 175

Gln His Ser Lys Glu Asp Arg Leu Ala Tyr Leu Asn His Leu Pro Gly
            180                 185                 190

Gly Glu Leu Met Ile Gln Leu Phe Phe Val Leu Tyr Gly Ile Leu Ala
        195                 200                 205

Leu Ala Phe Leu Ser Gly Tyr Tyr Val Thr Leu Ala Ala Gln Ile Leu
    210                 215                 220

Ala Val Leu Leu Pro Pro Val Met Leu Leu Ile Asp Gly Asn Val Ala
225                 230                 235                 240

Tyr Trp His Asn Thr Arg Arg Val Glu Phe Trp Asn Gln Met Lys Leu
                245                 250                 255

Leu Gly Glu Ser Val Gly Ile Phe Gly Thr Ala Val Ile Leu Ala Thr
            260                 265                 270

Asp Gly


<210> 272
<211> 203
<212> PRT
<213> Homo sapiens

<400> 272
Met Gln Leu Gly Ser Val Leu Leu Thr Arg Cys Pro Phe Trp Gly Cys
 1               5                  10                  15

Phe Ser Gln Leu Met Leu Tyr Ala Glu Arg Ala Glu Ala Arg Arg Lys
            20                  25                  30

Pro Asp Ile Pro Val Pro Tyr Leu Tyr Phe Asp Met Gly Ala Ala Val
        35                  40                  45

Leu Cys Ala Ser Phe Met Ser Phe Gly Val Lys Arg Arg Trp Phe Ala
    50                  55                  60

Leu Gly Ala Ala Leu Gln Leu Ala Ile Ser Thr Tyr Ala Ala Tyr Ile
65                  70                  75                  80

Gly Gly Tyr Val His Tyr Gly Asp Trp Leu Lys Val Arg Met Tyr Ser
                85                  90                  95

Arg Thr Val Ala Ile Ile Gly Gly Phe Leu Val Leu Ala Ser Gly Ala
            100                 105                 110

Gly Glu Leu Tyr Arg Arg Lys Pro Arg Ser Arg Ser Leu Gln Ser Thr
```

115 120 125

Gly Gln Val Phe Leu Gly Ile Tyr Leu Ile Cys Val Ala Tyr Ser Leu
130 135 140

Gln His Ser Lys Glu Asp Arg Leu Ala Tyr Leu Asn His Leu Pro Gly
145 150 155 160

Gly Glu Leu Met Ile Gln Leu Phe Phe Val Leu Tyr Gly Ile Leu Ala
165 170 175

Pro Gly Leu Ser Val Arg Leu Leu Arg Asp Pro Arg Cys Pro Asp Pro
180 185 190

Gly Cys Thr Ala Ala Pro Cys His Ala Ala His
195 200

<210> 273
<211> 407
<212> PRT
<213> Homo sapiens

<400> 273
Ser Asn Glu Ile Leu Leu Ser Phe Pro Gln Asn Tyr Tyr Ile Gln Trp
1 5 10 15

Leu Asn Gly Ser Leu Ile His Gly Leu Trp Asn Leu Ala Ser Leu Phe
20 25 30

Ser Asn Leu Cys Leu Phe Val Leu Met Pro Phe Ala Phe Phe Phe Leu
35 40 45

Glu Ser Glu Gly Phe Ala Gly Leu Lys Lys Gly Ile Arg Ala Arg Ile
50 55 60

Leu Glu Thr Leu Val Met Leu Leu Leu Leu Ala Leu Leu Ile Leu Gly
65 70 75 80

Ile Val Trp Val Ala Ser Ala Leu Ile Asp Asn Asp Ala Ala Ser Met
85 90 95

Glu Ser Leu Tyr Asp Leu Trp Glu Phe Tyr Leu Pro Tyr Leu Tyr Ser
100 105 110

Cys Ile Ser Leu Met Gly Cys Leu Leu Leu Leu Leu Cys Thr Pro Val
115 120 125

Gly Leu Ser Arg Met Phe Thr Val Met Gly His Leu Leu Val Lys Pro
130 135 140

Thr Ile Leu Glu Asp Leu Asp Glu Gln Ile Tyr Ile Ile Thr Leu Glu
145 150 155 160

Glu Glu Ala Leu Gln Arg Arg Leu Asn Gly Leu Ser Ser Ser Val Glu
165 170 175

Tyr Asn Ile Met Glu Leu Glu Gln Glu Leu Glu Asn Val Lys Thr Leu
180 185 190

```
Lys Thr Lys Leu Glu Arg Arg Lys Lys Ala Ser Ala Trp Glu Arg Asn
        195                 200                 205

Leu Val Tyr Pro Ala Val Met Val Leu Leu Leu Ile Glu Thr Ser Ile
    210                 215                 220

Ser Val Leu Leu Val Ala Cys Asn Ile Leu Cys Leu Leu Val Asp Glu
225                 230                 235                 240

Thr Ala Met Pro Lys Gly Thr Arg Gly Pro Gly Ile Gly Asn Ala Ser
                245                 250                 255

Leu Ser Thr Phe Gly Phe Val Gly Ala Ala Leu Glu Ile Ile Leu Ile
            260                 265                 270

Phe Tyr Leu Met Val Ser Ser Val Val Gly Phe Tyr Ser Leu Arg Phe
        275                 280                 285

Phe Gly Asn Phe Thr Pro Lys Lys Asp Asp Thr Thr Met Thr Lys Ile
    290                 295                 300

Ile Gly Asn Cys Val Ser Ile Leu Val Leu Ser Ser Ala Leu Pro Val
305                 310                 315                 320

Met Ser Arg Thr Leu Gly Ile Thr Arg Phe Asp Leu Leu Gly Asp Phe
                325                 330                 335

Gly Arg Phe Asn Trp Leu Gly Asn Phe Tyr Ile Val Leu Ser Tyr Asn
            340                 345                 350

Leu Leu Phe Ala Ile Val Thr Thr Leu Cys Leu Val Arg Lys Phe Thr
        355                 360                 365

Ser Ala Val Arg Glu Glu Leu Phe Lys Ala Leu Gly Leu His Lys Leu
    370                 375                 380

His Leu Pro Asn Thr Ser Arg Asp Ser Glu Thr Ala Lys Pro Ser Val
385                 390                 395                 400

Asn Gly His Gln Lys Ala Leu
                405


<210> 274
<211> 165
<212> PRT
<213> Homo sapiens

<400> 274
Arg Ser Tyr Met Gln Ser Val Trp Thr Glu Glu Ser Gln Cys Thr Leu
 1               5                  10                  15

Leu Asn Ala Ser Ile Thr Glu Thr Phe Asn Cys Ser Phe Ser Cys Gly
            20                  25                  30

Pro Asp Cys Trp Lys Leu Ser Gln Tyr Pro Cys Leu Gln Val Tyr Val
        35                  40                  45
```

Asn Leu Thr Ser Ser Gly Glu Lys Leu Leu Leu Tyr His Thr Glu Glu
50 55 60

Thr Ile Lys Ile Asn Gln Lys Cys Ser Tyr Ile Pro Lys Cys Gly Lys
65 70 75 80

Asn Phe Glu Glu Ser Met Ser Leu Val Asn Val Val Met Glu Asn Phe
85 90 95

Arg Lys Tyr Gln His Phe Ser Cys Tyr Ser Asp Pro Glu Gly Asn Gln
100 105 110

Lys Ser Val Ile Leu Thr Lys Leu Tyr Ser Ser Asn Val Leu Phe His
115 120 125

Ser Leu Phe Trp Pro Thr Cys Met Met Ala Gly Gly Val Ala Ile Val
130 135 140

Ala Met Val Lys Leu Thr Gln Tyr Leu Ser Leu Leu Cys Glu Arg Ile
145 150 155 160

Gln Arg Ile Asn Arg
165

<210> 275
<211> 155
<212> PRT
<213> Homo sapiens

<400> 275
Ala Phe Ala His Leu Gln Leu Gly Pro Met Trp Lys Leu Trp Arg Ala
1 5 10 15

Glu Glu Gly Ala Ala Ala Leu Gly Gly Ala Leu Phe Leu Leu Leu Phe
20 25 30

Ala Leu Gly Val Arg Gln Leu Leu Lys Gln Arg Arg Pro Met Gly Phe
35 40 45

Pro Pro Gly Pro Pro Gly Leu Pro Phe Ile Gly Asn Ile Tyr Ser Leu
50 55 60

Ala Ala Ser Ser Glu Leu Pro His Val Tyr Met Arg Lys Gln Ser Gln
65 70 75 80

Val Tyr Gly Glu Val Gln Pro Arg Arg Ala Pro Gly Arg Glu Gly Arg
85 90 95

Gln Ala Gly Pro Gly Trp Pro Gly Pro Ser Trp Leu Asp Leu Trp Pro
100 105 110

Pro Leu Gly Arg Leu Val Gly Thr Ser Pro Cys Ala Gly Cys Pro Leu
115 120 125

Arg Asp Thr Arg Phe Pro Gly Leu Glu Gly Arg Ser Pro Arg Arg Arg
130 135 140

Ala Pro Leu Gln Gly Glu Pro Arg Pro Cys Arg

145 150 155

<210> 276
<211> 42
<212> PRT
<213> Homo sapiens

<400> 276
Met Arg Val Arg Ile Gly Leu Thr Leu Leu Leu Cys Ala Val Leu Leu
1 5 10 15

Ser Leu Ala Ser Ala Ser Ser Asp Glu Glu Gly Ser Gln Asp Glu Ser
20 25 30

Leu Gly Phe Gln Asp Tyr Phe Asp Ile Arg
35 40

<210> 277
<211> 155
<212> PRT
<213> Homo sapiens

<400> 277
Met Ala Arg Gly Ser Leu Arg Arg Leu Leu Arg Leu Leu Val Leu Gly
1 5 10 15

Leu Trp Leu Ala Leu Leu Arg Ser Val Ala Gly Glu Gln Ala Pro Gly
20 25 30

Thr Ala Pro Cys Ser Arg Gly Ser Ser Trp Ser Ala Asp Leu Asp Lys
35 40 45

Cys Met Asp Cys Ser Thr Ser Cys Pro Leu Pro Ala Ala Leu Ala His
50 55 60

Pro Trp Gly Arg Ser Glu Pro Asp Leu Arg Ala Gly Ala Ala Phe Trp
65 70 75 80

Leu Phe Gly Leu Glu Thr Met Pro Gln Glu Arg Glu Val His His Pro
85 90 95

His Arg Gly Asp Arg Arg Arg Gly Leu Pro Ser Cys Gly Ala Asp Pro
100 105 110

Val Thr Met Cys Pro Leu Pro Ala Gly Ala Arg Pro Leu Ile Ile His
115 120 125

Ser Ser Ile Leu Glu Pro Val Ser Ala Ser Gln Thr Arg Arg Glu Pro
130 135 140

Ser Ser Ser Asn His Lys Gly Gly Gly Gly Arg
145 150 155

<210> 278
<211> 207
<212> PRT

<213> Homo sapiens

<400> 278
Gly Thr Ser Phe Leu Asp Pro Thr Leu Ser Leu Phe Val Leu Glu Lys
1 5 10 15

Phe Asn Leu Pro Ala Gly Tyr Val Gly Leu Val Phe Leu Gly Met Ala
20 25 30

Leu Ser Tyr Ala Ile Ser Ser Pro Leu Phe Gly Leu Leu Ser Asp Lys
35 40 45

Arg Pro Pro Leu Arg Lys Trp Leu Leu Val Phe Gly Asn Leu Ile Thr
50 55 60

Ala Gly Cys Tyr Met Leu Leu Gly Pro Val Pro Ile Leu His Ile Lys
65 70 75 80

Ser Gln Leu Trp Leu Leu Val Leu Ile Leu Val Val Ser Gly Leu Ser
85 90 95

Ala Gly Met Ser Ile Ile Pro Thr Phe Pro Glu Ile Leu Ser Cys Ala
100 105 110

His Glu Asn Gly Phe Glu Glu Gly Leu Ser Thr Leu Gly Leu Val Ser
115 120 125

Gly Leu Phe Ser Ala Met Trp Ser Ile Gly Ala Phe Met Gly Pro Thr
130 135 140

Leu Gly Gly Phe Leu Tyr Glu Lys Ile Gly Phe Glu Trp Ala Ala Ala
145 150 155 160

Ile Gln Gly Leu Trp Ala Leu Ile Ser Gly Leu Ala Met Gly Leu Phe
165 170 175

Tyr Leu Leu Glu Tyr Ser Arg Arg Lys Arg Ser Lys Ser Gln Asn Ile
180 185 190

Leu Ser Thr Glu Glu Glu Arg Thr Thr Leu Leu Pro Asn Glu Thr
195 200 205

<210> 279
<211> 85
<212> PRT
<213> Homo sapiens

<400> 279
Gly Thr Arg Glu Ala Arg Leu Arg Asp Leu Thr Arg Phe Tyr Asp Lys
1 5 10 15

Val Leu Ser Leu His Glu Asp Ser Thr Thr Pro Val Ala Asn Pro Leu
20 25 30

Leu Ala Phe Thr Leu Ile Lys Arg Leu Gln Ser Asp Trp Arg Asn Val
35 40 45

Val His Ser Leu Glu Ala Ser Glu Asn Ile Arg Ala Leu Lys Asp Gly

50 55 60

Tyr Glu Lys Val Glu Gln Asp Leu Pro Ala Phe Glu Asp Leu Glu Gly
65 70 75 80

Ala Ala Arg Ala Leu
85

<210> 280
<211> 7
<212> PRT
<213> Homo sapiens

<400> 280
Ala Leu Met Arg Leu Gln Asp
1 5

<210> 281
<211> 7
<212> PRT
<213> Homo sapiens

<400> 281
Val Glu Ala Gly Gly Ala Thr
1 5

<210> 282
<211> 489
<212> PRT
<213> Homo sapiens

<400> 282
Gly Thr Arg Glu Ala Arg Leu Arg Asp Leu Thr Arg Phe Tyr Asp Lys
1 5 10 15

Val Leu Ser Leu His Glu Asp Ser Thr Thr Pro Val Ala Asn Pro Leu
20 25 30

Leu Ala Phe Thr Leu Ile Lys Arg Leu Gln Ser Asp Trp Arg Asn Val
35 40 45

Val His Ser Leu Glu Ala Ser Glu Asn Ile Arg Ala Leu Lys Asp Gly
50 55 60

Tyr Glu Lys Val Glu Gln Asp Leu Pro Ala Phe Glu Asp Leu Glu Gly
65 70 75 80

Ala Ala Arg Ala Leu Met Arg Leu Gln Asp Val Tyr Met Leu Asn Val
85 90 95

Lys Gly Leu Ala Arg Gly Val Phe Gln Arg Val Thr Gly Ser Ala Ile
100 105 110

Thr Asp Leu Tyr Ser Pro Lys Arg Leu Phe Ser Leu Thr Gly Asp Asp
115 120 125

```
Cys Phe Gln Val Gly Lys Val Ala Tyr Asp Met Gly Asp Tyr Tyr His
    130                 135                 140

Ala Ile Pro Trp Leu Glu Glu Ala Val Ser Leu Phe Arg Gly Ser Tyr
145                 150                 155                 160

Gly Glu Trp Lys Thr Glu Asp Glu Ala Ser Leu Glu Asp Ala Leu Asp
                165                 170                 175

His Leu Ala Phe Ala Tyr Phe Arg Ala Gly Asn Val Ser Cys Ala Leu
            180                 185                 190

Ser Leu Ser Arg Glu Phe Leu Leu Tyr Ser Pro Asp Asn Lys Arg Met
        195                 200                 205

Ala Arg Asn Val Leu Lys Tyr Glu Arg Leu Leu Ala Glu Ser Pro Asn
    210                 215                 220

His Val Val Ala Glu Ala Val Ile Gln Arg Pro Asn Ile Pro His Leu
225                 230                 235                 240

Gln Thr Arg Asp Thr Tyr Glu Gly Leu Cys Gln Thr Leu Gly Ser Gln
                245                 250                 255

Pro Thr Leu Tyr Gln Ile Pro Ser Leu Tyr Cys Ser Tyr Glu Thr Asn
            260                 265                 270

Ser Asn Ala Tyr Leu Leu Leu Gln Pro Ile Arg Lys Glu Val Ile His
        275                 280                 285

Leu Gln Pro Tyr Ile Ala Leu Tyr His Asp Phe Val Ser Asp Ser Glu
    290                 295                 300

Ala Gln Lys Ile Arg Glu Leu Ala Glu Pro Trp Leu Gln Arg Ser Val
305                 310                 315                 320

Val Ala Ser Gly Glu Lys Gln Leu Gln Val Glu Tyr Arg Ile Ser Lys
                325                 330                 335

Ser Ala Trp Leu Lys Asp Thr Val Asp Leu Lys Leu Val Thr Leu Asn
            340                 345                 350

His Arg Ile Ala Ala Leu Thr Gly Leu Asp Val Arg Pro Pro Tyr Ala
        355                 360                 365

Glu Tyr Leu Gln Val Val Asn Tyr Gly Ile Gly Gly His Tyr Glu Pro
    370                 375                 380

His Phe Asp His Ala Thr Ser Pro Ser Ser Pro Leu Tyr Arg Met Lys
385                 390                 395                 400

Ser Gly Asn Arg Val Ala Thr Phe Met Ile Tyr Leu Ser Ser Val Glu
                405                 410                 415

Ala Gly Gly Ala Thr Ala Phe Ile Tyr Ala Asn Leu Ser Val Pro Val
            420                 425                 430

Val Arg Asn Ala Ala Leu Phe Trp Trp Asn Leu His Arg Ser Gly Glu
        435                 440                 445
```

```
Gly Asp Ser Asp Thr Leu His Ala Gly Cys Pro Val Leu Val Gly Asp
    450                 455                 460

Lys Trp Val Ala Asn Lys Trp Ile His Glu Tyr Gly Gln Glu Phe Arg
465                 470                 475                 480

Arg Pro Cys Ser Ser Ser Pro Glu Asp
                485


<210> 283
<211> 136
<212> PRT
<213> Homo sapiens

<400> 283
Ile Gln Pro Ser His Ala Ala Leu Leu His Cys Arg Ser Thr Phe Arg
  1               5                  10                  15

Lys Thr Glu Cys Leu Asp Pro Trp Trp Val Arg Arg Gln Leu Leu Gly
             20                  25                  30

Met Ala Gly Ile Gly Gly Leu Gln Lys Met Lys Ala Pro His Thr Gly
         35                  40                  45

Val Leu His Leu Gly Ser Val Trp Val Phe Leu Gly Pro Phe Leu Leu
     50                  55                  60

Gly Val Gly Tyr Thr Leu Thr Phe Asn Pro Leu Ser Gly Cys Met Ser
 65                  70                  75                  80

Thr Val Arg Trp Leu Asn Ser Asn Ile Thr Ala Asn Arg Thr Leu Ser
                 85                  90                  95

Arg Ser Val Cys His Val Thr Pro Leu His Arg Ser Leu Ser Pro His
            100                 105                 110

Asp Gly Glu Tyr Leu Arg Gln Met Leu Leu Asn Ser Ser Ser Arg Ala
        115                 120                 125

Gly Glu Ala Gly Ser Trp Gly Tyr
    130                 135


<210> 284
<211> 86
<212> PRT
<213> Homo sapiens

<400> 284
Cys Ser Ser Pro Pro Gly Arg Leu Pro Trp Cys Trp Thr Ala Pro Arg
  1               5                  10                  15

Thr Leu Gly Lys His Gly Ser Leu Ile Ser Thr Leu Arg Leu Thr Ala
             20                  25                  30

Pro Leu His Leu Ala Trp Lys Met Met Leu Ser Arg Lys Ala Leu Phe
         35                  40                  45
```

Val Leu Leu Asn Thr Pro Val Leu Phe His Ala Leu Glu Gly Arg Leu
50 55 60

Phe Ser Lys Leu Cys His His His Thr Ile Gln Arg Thr Leu Thr Val
65 70 75 80

Pro Lys Phe Arg Ser Ser
85

<210> 285
<211> 75
<212> PRT
<213> Homo sapiens

<400> 285
Arg Ser Pro Thr Ser Arg Val Gln Leu Leu Lys Arg Gln Ser Cys Pro
1 5 10 15

Cys Gln Arg Asn Asp Leu Asn Glu Glu Pro Gln His Phe Thr His Tyr
20 25 30

Ala Ile Tyr Asp Phe Ile Val Lys Gly Ser Cys Phe Cys Asn Gly His
35 40 45

Ala Asp Gln Cys Ile Pro Val His Gly Phe Arg Pro Val Lys Ala Pro
50 55 60

Gly Thr Phe His Met Val His Gly Lys Cys Met
65 70 75

<210> 286
<211> 296
<212> PRT
<213> Homo sapiens

<400> 286
His Asn Thr Ala Gly Ser His Cys Gln His Cys Ala Pro Leu Tyr Asn
1 5 10 15

Asp Arg Pro Trp Glu Ala Ala Asp Gly Lys Thr Gly Ala Pro Asn Glu
20 25 30

Cys Arg Thr Cys Lys Cys Asn Gly His Ala Asp Thr Cys His Phe Asp
35 40 45

Val Asn Val Trp Glu Ala Ser Gly Asn Arg Ser Gly Gly Val Cys Asp
50 55 60

Asp Cys Gln His Asn Thr Glu Gly Gln Tyr Cys Gln Arg Cys Lys Pro
65 70 75 80

Gly Phe Tyr Arg Asp Leu Arg Arg Pro Phe Ser Ala Pro Asp Ala Cys
85 90 95

Lys Pro Cys Ser Cys His Pro Val Gly Ser Ala Val Leu Pro Ala Asn
100 105 110

Ser Val Thr Phe Cys Asp Pro Ser Asn Gly Asp Cys Pro Cys Lys Pro
115 120 125

Gly Val Ala Gly Arg Arg Cys Asp Arg Cys Met Val Gly Tyr Trp Gly
130 135 140

Phe Gly Asp Tyr Gly Cys Arg Pro Cys Asp Cys Ala Gly Ser Cys Asp
145 150 155 160

Pro Ile Thr Gly Asp Cys Ile Ser Ser His Thr Asp Ile Asp Trp Tyr
165 170 175

His Glu Val Pro Asp Phe Arg Pro Val His Asn Lys Ser Glu Pro Ala
180 185 190

Trp Glu Trp Glu Asp Ala Gln Gly Phe Ser Ala Leu Leu His Ser Gly
195 200 205

Lys Cys Glu Cys Lys Glu Gln Thr Leu Gly Asn Ala Lys Ala Phe Cys
210 215 220

Gly Met Lys Tyr Ser Tyr Val Leu Lys Ile Lys Ile Leu Ser Ala His
225 230 235 240

Asp Lys Gly Thr His Val Glu Val Asn Val Lys Ile Lys Lys Val Leu
245 250 255

Lys Ser Thr Lys Leu Lys Ile Phe Arg Gly Lys Ala Asn Ile Ile Ser
260 265 270

Arg Ile Met Asp Gly Gln Arg Met His Leu Ser Asn Pro Gln Ser Trp
275 280 285

Phe Gly Ile Pro Cys Ser Arg Thr
290 295

<210> 287
<211> 37
<212> PRT
<213> Homo sapiens

<400> 287
Cys Asp Asp Cys Gln His Asn Thr Glu Gly Gln Tyr Cys Gln Arg Cys
1 5 10 15

Lys Pro Gly Phe Tyr Arg Asp Leu Arg Arg Pro Phe Ser Ala Pro Asp
20 25 30

Ala Cys Lys Pro Cys
35

<210> 288
<211> 36
<212> PRT
<213> Homo sapiens

```
<400> 288
Cys Pro Cys Lys Pro Gly Val Ala Gly Arg Arg Cys Asp Arg Cys Met
 1               5                  10                  15

Val Gly Tyr Trp Gly Phe Gly Asp Tyr Gly Cys Arg Pro Cys Asp Cys
            20                  25                  30

Ala Gly Ser Cys
        35


<210> 289
<211> 66
<212> PRT
<213> Homo sapiens

<400> 289
Asn Ile Ser Ser Gln Tyr Cys Ile Leu Lys Ser Leu Glu Met Met Ile
 1               5                  10                  15

Ser Gly Leu Lys Leu Leu Val Leu Phe Leu Lys Phe Ala Pro Glu Asn
            20                  25                  30

Tyr Cys Leu Ser Thr Glu Thr Leu Gln Met Pro Asn Arg His Leu Arg
        35                  40                  45

Leu Ser Lys Ala Thr Cys Tyr Leu Met Lys Cys Leu Leu Pro Ser Tyr
    50                  55                  60

Phe Glu
 65


<210> 290
<211> 88
<212> PRT
<213> Homo sapiens

<400> 290
Pro Ile Glu Gly Thr Pro Ala Gly Thr Gly Pro Glu Phe Pro Gly Arg
 1               5                  10                  15

Pro Thr Arg Pro Gln Arg Met Arg Ser Leu Ile Ser Ser His Pro Cys
            20                  25                  30

Gln His Leu Leu Leu Leu Leu Leu Leu Leu Phe Leu Ile Leu Ala Ile
        35                  40                  45

Leu Val Asp Val Lys Trp Tyr Leu Val Leu Phe Ile Cys Ile Ser Leu
    50                  55                  60

Met Thr Ser Asp Val Glu His Leu Phe Met Cys Leu Leu Ala Ile Arg
65                  70                  75                  80

Ile Ser Ser Trp Arg Asn Val Tyr
                85


<210> 291
```

<211> 60
<212> PRT
<213> Homo sapiens

<400> 291
```
Asn Trp Val Pro Thr Cys Leu Cys Pro Ser Ala Pro Cys Ser Phe His
 1               5                  10                  15

Leu Leu Ser Arg Phe Lys Cys Leu Phe Ser Pro Gln Arg Leu Thr Asp
            20                  25                  30

Ile Phe Arg Arg Tyr Asp Thr Asp Gln Asp Gly Trp Ile Gln Val Ser
        35                  40                  45

Tyr Glu Gln Tyr Leu Ser Met Val Phe Ser Ile Val
    50                  55                  60
```

<210> 292
<211> 33
<212> PRT
<213> Homo sapiens

<400> 292
```
Gln Arg Leu Thr Asp Ile Phe Arg Arg Tyr Asp Thr Asp Gln Asp Gly
 1               5                  10                  15

Trp Ile Gln Val Ser Tyr Glu Gln Tyr Leu Ser Met Val Phe Ser Ile
            20                  25                  30

Val
```

<210> 293
<211> 73
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (38)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (48)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (54)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (55)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (68)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 293
Met Phe Tyr Lys Leu Thr Leu Ile Leu Cys Glu Leu Ser Val Ala Gly
1 5 10 15

Val Thr Gln Ala Ala Ser Gln Arg Pro Leu Gln Arg Leu Pro Arg His
20 25 30

Ile Cys Ser Gln Arg Xaa Pro Pro Gly Arg Cys Leu Leu Lys Ala Xaa
35 40 45

Leu Gln Thr Thr Trp Xaa Xaa Pro Asp Lys Pro Ile Pro Arg Leu Ser
50 55 60

Pro Pro Leu Xaa Ser Asp Pro Lys Arg
65 70

<210> 294
<211> 95
<212> PRT
<213> Homo sapiens

<400> 294
Thr Ser Ser Pro Val Phe Ser Phe Cys Ser Met Ala Val Arg Glu Pro
1 5 10 15

Asp His Leu Gln Arg Val Ser Leu Pro Arg Tyr Asn Val Ser Ala Ser
20 25 30

Leu Gln Trp Leu Pro Cys His Arg Ile Val Leu Gln Pro Trp His Met
35 40 45

Cys Ala Met Trp Glu Leu Gly Gln Val Leu Phe His Pro Val Ala Pro
50 55 60

Arg Glu Gly Ala Ala Pro Ser Pro Val Ser Thr Leu Thr Trp Pro Ser
65 70 75 80

Ser Cys Ser His Ser Glu Ser Thr Met Glu Leu Glu Leu Gln Phe
85 90 95

<210> 295
<211> 16
<212> PRT
<213> Homo sapiens

<400> 295
Met Ala Val Arg Glu Pro Asp His Leu Gln Arg Val Ser Leu Pro Arg
1 5 10 15

<210> 296
<211> 7
<212> PRT
<213> Homo sapiens

<400> 296
Leu Pro Cys His Arg Ile Val
1 5

<210> 297
<211> 15
<212> PRT
<213> Homo sapiens

<400> 297
Ser Leu Gln Trp Leu Pro Cys His Arg Ile Val Leu Gln Pro Trp
1 5 10 15

<210> 298
<211> 454
<212> PRT
<213> Homo sapiens

<400> 298
Cys Phe Lys Arg Lys Pro Lys Arg Glu His Cys Ser Cys Pro Ile Thr
1 5 10 15

Tyr Gln Ser Leu Gly Asp Ile Leu Asn Ala Ser Phe Phe Ser Lys Arg
20 25 30

Lys Gly Met Gln Glu Val Lys Leu Asn Ser Tyr Val Val Ser Gly Thr
35 40 45

Ile Gly Leu Lys Glu Lys Ile Ser Leu Ser Glu Pro Val Phe Leu Thr
50 55 60

Phe Arg His Asn Gln Pro Gly Asp Lys Arg Thr Lys His Ile Cys Val
65 70 75 80

Tyr Trp Glu Gly Ser Glu Gly Gly Arg Trp Ser Thr Glu Gly Cys Ser
85 90 95

His Val His Ser Asn Gly Ser Tyr Thr Lys Cys Lys Cys Phe His Leu
100 105 110

Ser Ser Phe Ala Val Leu Val Ala Leu Ala Pro Lys Glu Asp Pro Val
115 120 125

Leu Thr Val Ile Thr Gln Val Gly Leu Thr Ile Ser Leu Leu Cys Leu
130 135 140

Phe Leu Ala Ile Leu Thr Phe Leu Leu Cys Arg Pro Ile Gln Asn Thr
145 150 155 160

Ser Thr Ser Leu His Leu Glu Leu Ser Leu Cys Leu Phe Leu Ala His
165 170 175

Leu Leu Phe Leu Thr Gly Ile Asn Arg Thr Glu Pro Glu Val Leu Cys
180 185 190

Ser Ile Ile Ala Gly Leu Leu His Phe Leu Tyr Leu Ala Cys Phe Thr
195 200 205

Trp Met Leu Leu Glu Gly Leu His Leu Phe Leu Thr Val Arg Asn Leu
210 215 220

Lys Val Ala Asn Tyr Thr Ser Thr Gly Arg Phe Lys Lys Arg Phe Met
225 230 235 240

Tyr Pro Val Gly Tyr Gly Ile Pro Ala Val Ile Ile Ala Val Ser Ala
245 250 255

Ile Val Gly Pro Gln Asn Tyr Gly Thr Phe Thr His Cys Trp Leu Lys
260 265 270

Leu Asp Lys Gly Phe Ile Trp Ser Phe Met Gly Pro Val Ala Val Ile
275 280 285

Ile Leu Ile Asn Leu Val Phe Tyr Phe Gln Val Leu Trp Ile Leu Arg
290 295 300

Ser Lys Leu Ser Ser Leu Asn Lys Glu Val Ser Thr Ile Gln Asp Thr
305 310 315 320

Arg Val Met Thr Phe Lys Ala Ile Ser Gln Leu Phe Ile Leu Gly Cys
325 330 335

Ser Trp Gly Leu Gly Phe Phe Met Val Glu Glu Val Gly Lys Thr Ile
340 345 350

Gly Ser Ile Ile Ala Tyr Ser Phe Thr Ile Ile Asn Thr Leu Gln Gly
355 360 365

Val Leu Leu Phe Val Val His Cys Leu Leu Asn Arg Gln Val Arg Met
370 375 380

Glu Tyr Lys Lys Trp Phe Ser Gly Met Arg Lys Gly Val Glu Thr Glu
385 390 395 400

Ser Thr Glu Met Ser Arg Ser Thr Thr Gln Thr Lys Thr Glu Glu Val
405 410 415

Gly Lys Ser Ser Glu Ile Phe His Lys Gly Gly Thr Ala Ser Ser Ser
420 425 430

Ala Glu Ser Thr Lys Gln Pro Gln Pro Gln Val His Leu Val Ser Ala
435 440 445

Ala Trp Leu Lys Met Asn
450

<210> 299
<211> 101
<212> PRT

<213> Homo sapiens

<400> 299
Phe Phe Trp Lys Glu Asn Leu Arg Arg Asn Gly Ser Arg Glu Asp Phe
1 5 10 15

Ala Arg Arg Ala Thr Gln Leu Ile Gln Ser Val Glu Leu Ser Ile Trp
20 25 30

Asn Ala Ser Phe Ala Ser Pro Gly Lys Gly Gln Ile Ser Glu Phe Asp
35 40 45

Ile Val Tyr Glu Thr Lys Arg Cys Asn Glu Thr Arg Glu Asn Ala Phe
50 55 60

Leu Glu Ala Gly Asn Asn Thr Met Asp Ile Asn Cys Ala Asp Ala Leu
65 70 75 80

Lys Gly Asn Leu Arg Glu Ser Thr Ala Val Ala Leu Ser Leu Ile Asn
85 90 95

Leu Leu Gly Ile Phe
100

<210> 300
<211> 27
<212> PRT
<213> Homo sapiens

<400> 300
Asp Ile Asn Glu Cys Glu Thr Gly Leu Ala Lys Cys Lys Tyr Lys Ala
1 5 10 15

Tyr Cys Arg Asn Lys Val Gly Gly Tyr Ile Cys
20 25

<210> 301
<211> 12
<212> PRT
<213> Homo sapiens

<400> 301
Cys Arg Asn Lys Val Gly Gly Tyr Ile Cys Ser Cys
1 5 10

<210> 302
<211> 331
<212> PRT
<213> Homo sapiens

<400> 302
Ala Leu Cys Pro His Pro His Leu Ile Leu Asn Val Thr Val Ser Pro
1 5 10 15

Ala Pro Ser Cys Arg His Val Lys Lys Val Val Ala Ser Pro Ser Pro
20 25 30

```
Ser Thr Thr Met Ile Ala Met Asp Ala Pro His Ser Lys Ala Ala Leu
        35                  40                  45

Asp Ser Ile Asn Glu Leu Pro Glu Asn Ile Leu Leu Glu Leu Phe Thr
    50                  55                  60

His Val Pro Ala Arg Gln Leu Leu Leu Asn Cys Arg Leu Val Cys Ser
65                  70                  75                  80

Leu Trp Arg Asp Leu Ile Asp Leu Met Thr Leu Trp Lys Arg Lys Cys
                85                  90                  95

Leu Arg Glu Gly Phe Ile Thr Lys Asp Trp Asp Gln Pro Val Ala Asp
            100                 105                 110

Trp Lys Ile Phe Tyr Phe Leu Arg Ser Leu His Arg Asn Leu Leu Arg
        115                 120                 125

Asn Pro Cys Ala Glu Glu Asp Met Phe Ala Trp Gln Ile Asp Phe Asn
    130                 135                 140

Gly Gly Asp Arg Trp Lys Val Glu Ser Leu Pro Gly Ala His Gly Thr
145                 150                 155                 160

Asp Phe Pro Asp Pro Lys Val Lys Lys Tyr Phe Val Thr Ser Tyr Glu
                165                 170                 175

Met Cys Leu Lys Ser Gln Leu Val Asp Leu Val Ala Glu Gly Tyr Trp
            180                 185                 190

Glu Glu Leu Leu Asp Thr Phe Arg Pro Asp Ile Val Val Lys Asp Trp
        195                 200                 205

Phe Ala Ala Arg Ala Asp Cys Gly Cys Thr Tyr Gln Leu Lys Val Gln
    210                 215                 220

Leu Ala Ser Ala Asp Tyr Phe Val Leu Ala Ser Phe Glu Pro Pro Pro
225                 230                 235                 240

Val Thr Ile Gln Gln Trp Asn Asn Ala Thr Trp Thr Glu Val Ser Tyr
                245                 250                 255

Thr Phe Ser Asp Tyr Pro Arg Gly Val Arg Tyr Ile Leu Phe Gln His
            260                 265                 270

Gly Gly Arg Asp Thr Gln Tyr Trp Ala Gly Trp Tyr Gly Pro Arg Val
        275                 280                 285

Thr Asn Ser Ser Ile Val Val Ser Pro Lys Met Thr Arg Asn Gln Ala
    290                 295                 300

Ser Ser Glu Ala Gln Pro Gly Gln Lys His Gly Gln Glu Glu Ala Ala
305                 310                 315                 320

Gln Ser Pro Tyr Arg Ala Val Val Gln Ile Phe
                325                 330
```

<210> 303
<211> 328
<212> PRT
<213> Homo sapiens

<400> 303
```
Arg Gln Arg Ser Trp Asn Pro Gly Thr Asn Cys Tyr His Pro Asn Met
 1               5                  10                  15

Pro Asp Ala Phe Leu Thr Cys Glu Thr Val Ile Phe Ala Trp Ala Ile
            20                  25                  30

Gly Gly Glu Gly Phe Ser Tyr Pro Pro His Val Gly Leu Ser Leu Gly
        35                  40                  45

Thr Pro Leu Asp Pro His Tyr Val Leu Leu Glu Val His Tyr Asp Asn
    50                  55                  60

Pro Thr Tyr Glu Glu Gly Leu Ile Asp Asn Ser Gly Leu Arg Leu Phe
65                  70                  75                  80

Tyr Thr Met Asp Ile Arg Lys Tyr Asp Ala Gly Val Ile Glu Ala Gly
                85                  90                  95

Leu Trp Val Ser Leu Phe His Thr Ile Pro Pro Gly Met Pro Glu Phe
            100                 105                 110

Gln Ser Glu Gly His Cys Thr Leu Glu Cys Leu Glu Glu Ala Leu Glu
        115                 120                 125

Ala Glu Lys Pro Ser Gly Ile His Val Phe Ala Val Leu Leu His Ala
    130                 135                 140

His Leu Ala Gly Arg Gly Ile Arg Leu Arg His Phe Arg Lys Gly Lys
145                 150                 155                 160

Glu Met Lys Leu Leu Ala Tyr Asp Asp Asp Phe Asp Phe Asn Phe Gln
                165                 170                 175

Glu Phe Gln Tyr Leu Lys Glu Glu Gln Thr Ile Leu Pro Gly Asp Asn
            180                 185                 190

Leu Ile Thr Glu Cys Arg Tyr Asn Thr Lys Asp Arg Ala Glu Met Thr
        195                 200                 205

Trp Gly Gly Leu Ser Thr Arg Ser Glu Met Cys Leu Ser Tyr Leu Leu
    210                 215                 220

Tyr Tyr Pro Arg Ile Asn Leu Thr Arg Cys Ala Ser Ile Pro Asp Ile
225                 230                 235                 240

Met Glu Gln Leu Gln Phe Ile Gly Val Lys Glu Ile Tyr Arg Pro Val
                245                 250                 255

Thr Thr Trp Pro Phe Ile Ile Lys Ser Pro Lys Gln Tyr Lys Asn Leu
            260                 255                 270

Ser Phe Met Asp Ala Met Asn Lys Phe Lys Trp Thr Lys Lys Glu Gly
        275                 280                 285
```

```
Leu Ser Phe Asn Lys Leu Val Leu Ser Leu Pro Val Asn Val Arg Cys
    290                 295                 300

Ser Lys Thr Asp Asn Ala Glu Trp Ser Ile Pro Arg Asn Asp Ser Ile
305                 310                 315                 320

Thr Ser Arg Tyr Arg Lys Thr Leu
                325


<210> 304
<211> 272
<212> PRT
<213> Homo sapiens

<400> 304
Met Cys Cys Trp Pro Leu Leu Leu Leu Trp Gly Leu Leu Pro Gly Thr
 1               5                  10                  15

Ala Ala Gly Gly Ser Gly Arg Thr Tyr Pro His Arg Thr Leu Leu Asp
            20                  25                  30

Ser Glu Gly Lys Tyr Trp Leu Gly Trp Ser Gln Arg Gly Ser Gln Ile
        35                  40                  45

Ala Phe Arg Leu Gln Val Arg Thr Ala Gly Tyr Val Gly Phe Gly Phe
    50                  55                  60

Ser Pro Thr Gly Ala Met Ala Ser Ala Asp Ile Val Val Gly Gly Val
65                  70                  75                  80

Ala His Gly Arg Pro Tyr Leu Gln Asp Tyr Phe Thr Asn Ala Asn Arg
                85                  90                  95

Glu Leu Lys Lys Asp Ala Gln Gln Asp Tyr His Leu Glu Tyr Ala Met
            100                 105                 110

Glu Asn Ser Thr His Thr Ile Ile Glu Phe Thr Arg Glu Leu His Thr
        115                 120                 125

Cys Asp Ile Asn Asp Lys Ser Ile Thr Asp Ser Thr Val Arg Val Ile
    130                 135                 140

Trp Ala Tyr His His Glu Asp Ala Gly Glu Ala Gly Pro Lys Tyr His
145                 150                 155                 160

Asp Ser Asn Arg Gly Thr Lys Ser Leu Arg Leu Leu Asn Pro Glu Lys
                165                 170                 175

Thr Ser Val Leu Ser Thr Ala Leu Pro Tyr Phe Asp Leu Val Asn Gln
            180                 185                 190

Asp Val Pro Ile Pro Asn Lys Asp Thr Thr Tyr Trp Cys Gln Met Phe
        195                 200                 205

Lys Ile Pro Val Phe Gln Glu Lys His His Val Ile Lys Val Glu Pro
    210                 215                 220
```

Val Ile Gln Arg Gly His Glu Ser Leu Val His His Ile Leu Leu Tyr
225 230 235 240

Gln Cys Ser Asn Asn Phe Asn Asp Ser Val Pro Gly Ile Arg Ala Arg
245 250 255

Ile Ala Ile Thr Pro Thr Cys Pro Met His Ser Ser Pro Val Lys Leu
260 265 270

<210> 305
<211> 207
<212> PRT
<213> Homo sapiens

<400> 305
Thr Gly Thr Phe Trp Ser Pro Arg Ser Gln Arg Arg Gly Cys Cys Gly
1 5 10 15

Arg Arg Ala Pro Arg Pro Glu Ala Met Glu Asn Gly Ala Val Tyr Ser
20 25 30

Pro Thr Thr Glu Glu Asp Pro Gly Pro Ala Arg Gly Pro Arg Ser Gly
35 40 45

Leu Ala Ala Tyr Phe Phe Met Gly Arg Leu Pro Leu Leu Arg Arg Val
50 55 60

Leu Lys Gly Leu Gln Leu Leu Leu Ser Leu Leu Ala Phe Ile Cys Glu
65 70 75 80

Glu Val Val Ser Gln Cys Thr Leu Cys Gly Gly Leu Tyr Phe Phe Glu
85 90 95

Phe Val Ser Cys Ser Ala Phe Leu Leu Ser Leu Leu Ile Leu Ile Val
100 105 110

Tyr Cys Thr Pro Phe Tyr Glu Arg Val Asp Thr Thr Lys Val Lys Ser
115 120 125

Ser Asp Phe Tyr Ile Thr Leu Gly Thr Gly Cys Val Phe Leu Leu Ala
130 135 140

Ser Ile Ile Phe Val Ser Thr His Asp Arg Thr Ser Ala Glu Ile Ala
145 150 155 160

Ala Ile Val Phe Gly Phe Ile Ala Ser Phe Met Phe Leu Leu Asp Phe
165 170 175

Ile Thr Met Leu Tyr Glu Lys Arg Gln Glu Ser Gln Leu Arg Lys Pro
180 185 190

Glu Asn Thr Thr Arg Ala Glu Ala Leu Thr Glu Pro Leu Asn Ala
195 200 205

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<210> 306
<211> 135
<212> PRT
<213> Homo sapiens

<400> 306
Ala Ser Ala Pro Arg Val Met Arg Gly His Leu Ala Gly Phe Pro Ala
1               5                   10                  15

Leu Ser Gly Leu Ala Ser Val Cys Leu Trp Ala Thr Phe Ser Ala Gln
            20                  25                  30

Leu Pro Gly Pro Val Ala Ala Thr Ser Trp Thr Pro Ala Pro Leu Gly
        35                  40                  45

Cys Ser Ala Ala Arg Ser Gly Pro Glu Lys Arg Leu Gly Thr Ala Ala
    50                  55                  60

Pro Gly Ser Ala Ala Ser Leu Ala Gln Ala Gly Pro Gly Ala Pro Cys
65                  70                  75                  80

Arg Val Leu Pro Val Asp Pro Ala Pro Ala Ala Leu Asn Val Arg Glu
                85                  90                  95

Pro Gly Trp Leu Gly Gly Leu Phe Asp Gly Ala Leu Leu Gln Val Leu
            100                 105                 110

Leu Asn Phe Leu Arg Lys Ser Thr Asp Val Leu Met Asp Thr Arg Glu
        115                 120                 125

Ala Glu Ser Leu Glu Val Glu
    130                 135


<210> 307
<211> 188
<212> PRT
<213> Homo sapiens

<400> 307
Asn Lys Leu His Ser Phe Pro Val Phe Leu Ser Gln Leu Leu Leu Asp
1               5                   10                  15

Arg Gln Leu Leu His Ala Pro Gln Thr Leu Pro Thr Pro His Cys Gly
            20                  25                  30

Gly Ser Ser Arg Pro Gly Pro Ser His Pro Pro Trp Leu Leu Ile Gln
        35                  40                  45

Leu Pro Cys Val His Val Ala Leu Trp Gln Met Leu Arg Asp Phe Ser
    50                  55                  60

Asp Ser Arg Ile Thr Pro Ser Thr Leu Thr Thr Gln Pro Ala Ala Gln
65                  70                  75                  80

Thr Ala Ala Pro Ala Lys Asp Gln Glu Ser Asp Ile Val Gly Gly Glu
                85                  90                  95

Gly Ile Leu Cys Asp Ile Ala Phe Leu Gln Glu Asp His Pro Leu Gly
```

```
            100                 105                 110

Val Gly Gly Ala Ser Ala Pro Ser Ser Arg Arg Glu Leu Ser Arg Arg
        115                 120                 125

Gly Val His Thr Gln Thr Leu Pro Glu Asp Gly Thr Leu His Gly Thr
    130                 135                 140

Pro Ser Ser Ser Phe Asp Cys Gly Ile Lys Tyr Ile Ile Ser Trp Pro
145                 150                 155                 160

Leu Ala Pro Gly Cys Asp Leu Pro Ser Leu Glu Leu Ser Leu Val Cys
                165                 170                 175

Lys Gly Val Ser Ser Cys Met Gly Phe Ala Ala Gly
            180                 185


<210> 308
<211> 78
<212> PRT
<213> Homo sapiens

<400> 308
Pro Gly Arg Pro Thr Arg Pro Thr Lys Asn Lys Val Cys Val Cys Leu
  1               5                  10                  15

Gly Met Leu Phe Trp Ala Tyr Pro Ile Cys Val Phe Ile Asp Ser Leu
             20                  25                  30

Ser Cys Gln Pro Cys Leu Trp Ser Thr Gly Ala Thr Ser His Phe Asn
         35                  40                  45

Ser Pro Thr Thr Ser Pro Leu Phe Thr Leu Phe Met Pro Cys Ala Leu
     50                  55                  60

Ala Pro Asn Pro Phe Thr Gln Leu Gly Lys Leu Asp Asp Arg
 65                  70                  75


<210> 309
<211> 10
<212> PRT
<213> Homo sapiens

<400> 309
Pro Val Asp Leu Thr Lys Thr Arg Leu Gln
  1               5                  10


<210> 310
<211> 10
<212> PRT
<213> Homo sapiens

<400> 310
Pro Thr Asp Val Leu Lys Ile Arg Met Gln
  1               5                  10
```

<210> 311
<211> 313
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (117)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 311
Met Thr Phe Gly Ser Thr Ile Ser Pro Thr Ser Thr His Ala Ser Pro
1 5 10 15

Ser Leu Gly Phe Cys Cys Ser Trp Leu Leu Glu Asp Leu Glu Glu Gln
20 25 30

Leu Tyr Cys Ser Ala Phe Glu Glu Ala Ala Leu Thr Arg Arg Ile Cys
35 40 45

Asn Pro Thr Ser Cys Trp Leu Pro Leu Asp Met Glu Leu Leu His Arg
50 55 60

Gln Val Leu Ala Leu Gln Thr Gln Arg Val Leu Leu Gly Met Trp Leu
65 70 75 80

Arg Arg Ala Trp Asp Thr Trp Val Ser Pro Arg Arg Val Ala Pro Gly
85 90 95

Ser Arg Cys Leu Leu Thr Ala Ser His Pro Cys Thr Glu Lys Arg Arg
100 105 110

Lys Ala Ser Ala Xaa Gln Arg Asn Leu Gly Tyr Pro Leu Ala Met Leu
115 120 125

Cys Leu Leu Val Leu Thr Gly Leu Ser Val Leu Ile Val Ala Ile His
130 135 140

Ile Leu Glu Leu Leu Ile Asp Glu Ala Ala Met Pro Arg Gly Met Gln
145 150 155 160

Gly Thr Ser Leu Gly Gln Val Ser Phe Ser Lys Leu Gly Ser Phe Gly
165 170 175

Ala Val Ile Gln Val Val Leu Ile Phe Tyr Leu Met Val Ser Ser Val
180 185 190

Val Gly Phe Tyr Ser Ser Pro Leu Phe Arg Ser Leu Arg Pro Arg Trp
195 200 205

His Asp Thr Ala Met Thr Gln Ile Ile Gly Asn Cys Val Cys Leu Leu
210 215 220

Val Leu Ser Ser Ala Leu Pro Val Phe Ser Arg Thr Leu Gly Leu Thr
225 230 235 240

Arg Phe Asp Leu Leu Gly Asp Phe Gly Arg Phe Asn Trp Leu Gly Asn
245 250 255

```
Phe Tyr Ile Val Phe Leu Tyr Asn Ala Ala Phe Ala Gly Leu Thr Thr
            260                 265                 270

Leu Cys Leu Val Lys Thr Phe Thr Ala Ala Val Arg Ala Glu Leu Ile
        275                 280                 285

Arg Ala Phe Gly Leu Asp Arg Leu Pro Leu Pro Val Ser Gly Phe Pro
    290                 295                 300

Gln Ala Ser Arg Lys Thr Gln His Gln
305                 310


<210> 312
<211> 92
<212> PRT
<213> Homo sapiens

<400> 312
Leu Cys Val Cys Leu Val Tyr Leu Cys Met Tyr Gly Val Cys Leu Cys
 1               5                  10                  15

Val Ile Val Cys Val Ser Gly Val Ser Leu Cys Leu Tyr Val Trp Gly
            20                  25                  30

Val Ser Val Cys Asp Cys Val Ser Val Phe Met Cys Val Cys Leu Cys
        35                  40                  45

Val Ile Phe Cys Val Tyr Gly Lys Pro Arg Thr Glu His Tyr His Ser
    50                  55                  60

Pro His Leu Ala Lys Gln Lys Ala Phe Arg Glu Met Cys Gly Arg His
65                  70                  75                  80

Asp Val Ser Ala Ala Gly Ile Phe Gln Ser Tyr Val
                85                  90


<210> 313
<211> 207
<212> PRT
<213> Homo sapiens

<400> 313
Gly His Met Pro Tyr Gly Trp Leu Thr Glu Ile Arg Ala Val Tyr Pro
 1               5                  10                  15

Ala Phe Asp Lys Asn Asn Pro Ser Asn Lys Leu Val Ser Thr Ser Asn
            20                  25                  30

Thr Val Thr Ala Ala His Ile Lys Lys Phe Thr Phe Val Cys Met Ala
        35                  40                  45

Leu Ser Leu Thr Leu Cys Phe Val Met Phe Trp Thr Pro Asn Val Ser
    50                  55                  60

Glu Lys Ile Leu Ile Asp Ile Ile Gly Val Asp Phe Ala Phe Ala Glu
65                  70                  75                  80
```

Leu Cys Val Val Pro Leu Arg Ile Phe Ser Phe Phe Pro Val Pro Val
85 90 95

Thr Val Arg Ala His Leu Thr Gly Trp Leu Met Thr Leu Lys Lys Thr
100 105 110

Phe Val Leu Ala Pro Ser Ser Val Leu Arg Ile Ile Val Leu Ile Ala
115 120 125

Ser Leu Val Val Leu Pro Tyr Leu Gly Val His Gly Ala Thr Leu Gly
130 135 140

Val Gly Ser Leu Leu Ala Gly Phe Val Gly Glu Ser Thr Met Val Ala
145 150 155 160

Ile Ala Ala Cys Tyr Val Tyr Arg Lys Gln Lys Lys Lys Met Glu Asn
165 170 175

Glu Ser Ala Thr Glu Gly Glu Asp Ser Ala Met Thr Asp Met Pro Pro
180 185 190

Thr Glu Glu Val Thr Asp Ile Val Glu Met Arg Glu Glu Asn Glu
195 200 205

<210> 314
<211> 114
<212> PRT
<213> Homo sapiens

<400> 314
Gln Val Val Phe Val Ala Ile Leu Leu His Ser His Leu Glu Cys Arg
1 5 10 15

Glu Pro Leu Leu Ile Pro Ile Leu Ser Leu Tyr Met Gly Ala Leu Val
20 25 30

Arg Cys Thr Thr Leu Cys Leu Gly Tyr Tyr Lys Asn Ile His Asp Ile
35 40 45

Ile Pro Asp Arg Ser Gly Pro Glu Leu Gly Gly Asp Ala Thr Ile Arg
50 55 60

Lys Met Leu Ser Phe Trp Trp Pro Leu Ala Leu Ile Leu Ala Thr Gln
65 70 75 80

Arg Ile Ser Arg Pro Ile Val Asn Leu Phe Val Ser Arg Asp Leu Gly
85 90 95

Gly Ser Ser Ala Ala Thr Glu Ala Val Ala Ile Leu Thr Ala Thr Tyr
100 105 110

Pro Val

<210> 315
<211> 115

<212> PRT
<213> Homo sapiens

<400> 315
Arg Cys Cys Cys Arg Gly Cys Ser Cys Arg Ala Arg Leu Cys Pro Pro
1 5 10 15

Ala Arg Ser Thr Ala Val Ala Pro Glu Cys Arg Gly Ala His Pro Ser
20 25 30

Arg Ala Met Arg Pro Gly Thr Ala Leu Gln Ala Val Leu Leu Ala Val
35 40 45

Leu Leu Val Gly Leu Arg Ala Ala Thr Gly Arg Leu Leu Ser Gly Gln
50 55 60

Pro Val Cys Arg Gly Gly Thr Gln Arg Pro Cys Tyr Lys Val Ile Tyr
65 70 75 80

Phe His Asp Thr Ser Arg Arg Leu Asn Phe Glu Glu Ala Lys Glu Ala
85 90 95

Cys Arg Arg Gly Trp Arg Pro Ala Ser Gln His Arg Val Leu Lys Met
100 105 110

Asn Arg Asn
115

<210> 316
<211> 81
<212> PRT
<213> Homo sapiens

<400> 316
Met Arg Pro Gly Thr Ala Leu Gln Ala Val Leu Leu Ala Val Leu Leu
1 5 10 15

Val Gly Leu Arg Ala Ala Thr Gly Arg Leu Leu Ser Gly Gln Pro Val
20 25 30

Cys Arg Gly Gly Thr Gln Arg Pro Cys Tyr Lys Val Ile Tyr Phe His
35 40 45

Asp Thr Ser Arg Arg Leu Asn Phe Glu Glu Ala Lys Glu Ala Cys Arg
50 55 60

Arg Gly Trp Arg Pro Ala Ser Gln His Arg Val Leu Lys Met Asn Arg
65 70 75 80

Asn

<210> 317
<211> 290
<212> PRT
<213> Homo sapiens

<400> 317

Ile Arg His Glu Gln Gln Gly Glu Glu Asp Asp Glu His Ala Arg Pro
1 5 10 15

Leu Ala Glu Ser Leu Leu Leu Ala Ile Ala Asp Leu Leu Phe Cys Pro
20 25 30

Asp Phe Thr Val Gln Ser His Arg Arg Ser Thr Val Asp Ser Ala Glu
35 40 45

Asp Val His Ser Leu Asp Ser Cys Glu Tyr Ile Trp Glu Ala Gly Val
50 55 60

Gly Phe Ala His Ser Pro Gln Pro Asn Tyr Ile His Asp Met Asn Arg
65 70 75 80

Met Glu Leu Leu Lys Leu Leu Leu Thr Cys Phe Ser Glu Ala Met Tyr
85 90 95

Leu Pro Pro Ala Pro Glu Ser Gly Ser Thr Asn Pro Trp Val Gln Phe
100 105 110

Phe Cys Ser Thr Glu Asn Arg His Ala Leu Pro Leu Phe Thr Ser Leu
115 120 125

Leu Asn Thr Val Cys Ala Tyr Asp Pro Val Gly Tyr Gly Ile Pro Tyr
130 135 140

Asn His Leu Leu Phe Ser Asp Tyr Arg Glu Pro Leu Val Glu Glu Ala
145 150 155 160

Ala Gln Val Leu Ile Val Thr Leu Asp His Asp Ser Ala Ser Ser Ala
165 170 175

Ser Pro Thr Val Asp Gly Thr Thr Thr Gly Thr Ala Met Asp Asp Ala
180 185 190

Asp Pro Pro Gly Pro Glu Asn Leu Phe Val Asn Tyr Leu Ser Arg Ile
195 200 205

His Arg Glu Glu Asp Phe Gln Phe Ile Leu Lys Gly Ile Ala Arg Leu
210 215 220

Leu Ser Asn Pro Leu Leu Gln Thr Tyr Leu Pro Asn Ser Thr Lys Lys
225 230 235 240

Asp Pro Val Pro Pro Gly Ala Ala Ser Ser Leu Leu Glu Ala Leu Arg
245 250 255

Leu Gln Gln Glu Ile Pro Leu Leu Arg Ala Glu Glu Gln Arg Arg Pro
260 265 270

Arg His Pro Cys Pro His Pro Leu Leu Pro Gln Arg Cys Pro Gly Arg
275 280 285

Ser Val
290

<210> 318
<211> 318
<212> PRT
<213> Homo sapiens

<400> 318
Arg Leu Val Tyr Asn Lys Thr Ser Arg Ala Thr Gln Phe Pro Asp Gly
1 5 10 15

Val Asp Val Arg Val Pro Gly Phe Gly Lys Thr Phe Ser Leu Glu Phe
20 25 30

Leu Asp Pro Ser Lys Ser Ser Val Gly Ser Tyr Phe His Thr Met Val
35 40 45

Glu Ser Leu Val Gly Trp Gly Tyr Thr Arg Gly Glu Asp Val Arg Gly
50 55 60

Ala Pro Tyr Asp Trp Arg Arg Ala Pro Asn Glu Asn Gly Pro Tyr Phe
65 70 75 80

Leu Ala Leu Arg Glu Met Ile Glu Glu Met Tyr Gln Leu Tyr Gly Gly
85 90 95

Pro Val Val Leu Val Ala His Ser Met Gly Asn Met Tyr Thr Leu Tyr
100 105 110

Phe Leu Gln Arg Gln Pro Gln Ala Trp Lys Asp Lys Tyr Ile Arg Ala
115 120 125

Phe Val Ser Leu Gly Ala Pro Trp Gly Gly Val Ala Lys Thr Leu Arg
130 135 140

Val Leu Ala Ser Gly Asp Asn Asn Arg Ile Pro Val Ile Gly Pro Leu
145 150 155 160

Lys Ile Arg Glu Gln Gln Arg Ser Ala Val Ser Thr Ser Trp Leu Leu
165 170 175

Pro Tyr Asn Tyr Thr Trp Ser Pro Glu Lys Val Phe Val Gln Thr Pro
180 185 190

Thr Ile Asn Tyr Thr Leu Arg Asp Tyr Arg Lys Phe Phe Gln Asp Ile
195 200 205

Gly Phe Glu Asp Gly Trp Leu Met Arg Gln Asp Thr Glu Gly Leu Val
210 215 220

Glu Ala Thr Met Pro Pro Gly Val Gln Leu His Cys Leu Tyr Gly Thr
225 230 235 240

Gly Val Pro Thr Pro Asp Ser Phe Tyr Tyr Glu Ser Phe Pro Asp Arg
245 250 255

Asp Pro Lys Ile Cys Phe Gly Asp Gly Asp Gly Thr Val Asn Leu Lys
260 265 270

Ser Ala Leu Gln Cys Gln Ala Trp Gln Ser Arg Gln Glu His Gln Val
275 280 285

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Leu Leu Gln Glu Leu Pro Gly Ser Glu His Ile Glu Met Leu Ala Asn
    290                 295                 300

Ala Thr Thr Leu Ala Tyr Leu Lys Arg Val Leu Leu Gly Pro
305                 310                 315


<210> 319
<211> 362
<212> PRT
<213> Homo sapiens

<400> 319
Met Asn Lys Glu Asp Lys Val Trp Asn Asp Cys Lys Gly Val Asn Lys
  1               5                  10                  15

Leu Thr Asn Leu Glu Glu Gln Tyr Ile Ile Leu Ile Phe Gln Asn Gly
             20                  25                  30

Leu Asp Pro Pro Ala Asn Met Val Phe Glu Ser Ile Ile Asn Glu Ile
         35                  40                  45

Gly Ile Lys Asn Asn Ile Ser Asn Phe Phe Ala Lys Ile Pro Phe Glu
    50                  55                  60

Glu Ala Asn Gly Arg Leu Val Ala Cys Thr Arg Thr Tyr Glu Glu Ser
65                  70                  75                  80

Ile Lys Gly Ser Cys Gly Gln Lys Glu Asn Lys Ile Lys Thr Val Ser
                85                  90                  95

Phe Glu Ser Lys Ile Gln Leu Arg Ser Lys Gln Glu Phe Gln Phe Phe
            100                 105                 110

Asp Glu Glu Glu Glu Thr Gly Glu Asn His Thr Ile Phe Ile Gly Pro
        115                 120                 125

Val Glu Lys Leu Ile Val Tyr Pro Pro Pro Pro Ala Lys Gly Gly Ile
    130                 135                 140

Ser Val Thr Asn Glu Asp Leu His Cys Leu Asn Glu Gly Glu Phe Leu
145                 150                 155                 160

Asn Asp Val Ile Ile Asp Phe Tyr Leu Lys Tyr Leu Val Leu Glu Lys
                165                 170                 175

Leu Lys Lys Glu Asp Ala Asp Arg Ile His Ile Phe Ser Ser Phe Phe
            180                 185                 190

Tyr Lys Arg Leu Asn Gln Arg Glu Arg Arg Asn His Glu Thr Thr Asn
        195                 200                 205

Leu Ser Ile Gln Gln Lys Arg His Gly Arg Val Lys Thr Trp Thr Arg
    210                 215                 220

His Val Asp Ile Phe Glu Lys Asp Phe Ile Phe Val Pro Leu Asn Glu
225                 230                 235                 240
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Ala Ala His Trp Phe Leu Ala Val Val Cys Phe Pro Gly Leu Glu Lys
245 250 255

Pro Lys Tyr Glu Pro Asn Pro His Tyr His Glu Asn Ala Val Ile Gln
260 265 270

Lys Cys Ser Thr Val Glu Asp Ser Cys Ile Ser Ser Ser Ala Ser Glu
275 280 285

Met Glu Ser Cys Ser Gln Asn Ser Ser Ala Lys Pro Val Ile Lys Lys
290 295 300

Met Leu Asn Lys Lys His Cys Ile Ala Val Ile Asp Ser Asn Pro Gly
305 310 315 320

Gln Glu Glu Ser Asp Pro Arg Tyr Lys Arg Asn Ile Cys Ser Val Lys
325 330 335

Tyr Ser Val Lys Lys Ile Asn His Thr Ala Ser Glu Asn Glu Glu Phe
340 345 350

Asn Lys Gly Glu Ser Thr Ser Gln Lys Ser
355 360

<210> 320
<211> 330
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (38)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (247)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 320
Met Ser Pro Leu Ser Ala Ala Arg Ala Ala Leu Arg Val Tyr Ala Val
1 5 10 15

Gly Ala Ala Val Ile Leu Ala Gln Leu Leu Arg Arg Cys Arg Gly Gly
20 25 30

Phe Leu Glu Pro Val Xaa Pro Pro Arg Pro Asp Arg Val Ala Ile Val
35 40 45

Thr Gly Gly Thr Asp Gly Ile Gly Tyr Ser Thr Ala Asn Ile Trp Arg
50 55 60

Asp Leu Gly Met His Val Ile Ile Ala Gly Asn Asn Asp Ser Lys Ala
65 70 75 80

Lys Gln Val Val Ser Lys Ile Lys Glu Glu Thr Leu Asn Asp Lys Val
85 90 95

Glu Phe Leu Tyr Cys Asp Leu Ala Ser Met Thr Ser Ile Arg Gln Phe
100 105 110

Val Gln Lys Phe Lys Met Lys Lys Ile Pro Leu His Val Leu Ile Asn
115 120 125

Asn Ala Gly Val Met Met Val Pro Gln Arg Lys Thr Arg Asp Gly Phe
130 135 140

Glu Glu His Phe Gly Leu Asn Tyr Leu Gly His Phe Leu Leu Thr Asn
145 150 155 160

Leu Leu Leu Asp Thr Leu Lys Glu Ser Gly Ser Pro Gly His Ser Ala
165 170 175

Arg Val Val Thr Val Ser Ser Ala Thr His Tyr Val Ala Glu Leu Asn
180 185 190

Met Asp Asp Leu Gln Ser Ser Ala Cys Tyr Ser Pro His Ala Ala Tyr
195 200 205

Ala Gln Ser Lys Leu Ala Leu Val Leu Phe Thr Tyr His Leu Gln Arg
210 215 220

Leu Leu Ala Ala Glu Gly Ser His Val Thr Ala Asn Val Val Asp Pro
225 230 235 240

Gly Val Val Asn Thr Asp Xaa Tyr Lys His Val Phe Trp Ala Thr Arg
245 250 255

Leu Ala Lys Lys Leu Leu Gly Trp Leu Leu Phe Lys Thr Pro Asp Glu
260 265 270

Gly Ala Trp Thr Ser Ile Tyr Ala Ala Val Thr Pro Glu Leu Glu Gly
275 280 285

Val Gly Gly Arg Tyr Leu Tyr Asn Glu Lys Glu Thr Lys Ser Leu His
290 295 300

Val Thr Tyr Asn Gln Lys Leu Gln Gln Gln Leu Trp Ser Lys Ser Cys
305 310 315 320

Glu Met Thr Gly Val Leu Asp Val Thr Leu
325 330

<210> 321
<211> 71
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (38)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 321
Met Ser Pro Leu Ser Ala Ala Arg Ala Ala Leu Arg Val Tyr Ala Val
1 5 10 15

Gly Ala Ala Val Ile Leu Ala Gln Leu Leu Arg Arg Cys Arg Gly Gly
20 25 30

Phe Leu Glu Pro Val Xaa Pro Pro Arg Pro Asp Arg Val Ala Ile Val
35 40 45

Thr Gly Gly Thr Asp Gly Ile Gly Tyr Ser Thr Ala Asn Ile Trp Arg
50 55 60

Asp Leu Ala Cys Met Leu Ser
65 70

<210> 322
<211> 266
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (97)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (174)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (195)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (199)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (206)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 322
Met Glu Val Thr Thr Glu Asp Thr Ser Arg Thr Asp Val Ser Glu Pro
1 5 10 15

Ala Thr Ser Gly Gly Ala Ala Asp Gly Val Thr Ser Ile Ala Pro Thr
20 25 30

Ala Val Ala Ser Ser Thr Thr Ala Ala Ser Ile Thr Thr Ala Ala Ser
35 40 45

Ser Met Thr Val Ala Ser Ser Ala Pro Thr Thr Ala Ala Ser Ser Thr
50 55 60

Thr Val Ala Ser Ile Ala Pro Thr Thr Thr Ala Ser Ser Met Thr Ala
65 70 75 80

```
Ala Ser Ser Thr Pro Met Thr Leu Ala Leu Pro Ala Pro Thr Ser Thr
                85                  90                  95

Xaa Thr Gly Arg Thr Pro Ser Thr Thr Ala Thr Gly His Pro Ser Leu
            100                 105                 110

Ser Thr Ala Leu Ala Gln Val Pro Lys Ser Ser Ala Leu Pro Arg Thr
        115                 120                 125

Ala Thr Leu Ala Thr Leu Ala Thr Arg Ala Gln Thr Val Ala Thr Thr
    130                 135                 140

Ala Asn Thr Ser Ser Pro Met Ser Thr Arg Pro Ser Pro Ser Lys His
145                 150                 155                 160

Met Pro Ser Asp Thr Ala Ala Ser Pro Val Pro Pro Met Xaa Pro Gln
                165                 170                 175

Ala Gln Gly Pro Ile Ser Gln Val Ser Val Asp Gln Pro Val Val Asn
            180                 185                 190

Thr Thr Xaa Lys Ser Thr Xaa Met Pro Ser Asn Thr Thr Xaa Glu Pro
        195                 200                 205

Leu Thr Gln Ala Val Val Asp Lys Thr Leu Leu Leu Val Val Leu Leu
    210                 215                 220

Leu Gly Val Thr Leu Phe Ile Thr Val Leu Val Leu Phe Ala Leu Gln
225                 230                 235                 240

Ala Tyr Glu Ser Tyr Lys Lys Lys Asp Tyr Thr Gln Val Asp Tyr Leu
                245                 250                 255

Ile Asn Gly Met Tyr Ala Asp Ser Glu Met
            260                 265


<210> 323
<211> 99
<212> PRT
<213> Homo sapiens

<400> 323
Ala Arg Cys Pro Glu Leu Pro Gly Leu Arg Cys Arg Pro Arg Pro Arg
  1               5                  10                  15

Ala Gly Pro Gln Ala Pro Ser Tyr Cys Pro Arg Ala Thr Arg Pro Pro
            20                  25                  30

Gly Ala Cys Cys Ala Arg Met Arg Leu Leu Leu Glu Trp Arg Val Tyr
        35                  40                  45

Leu Arg Leu Thr Cys Ala Thr Lys Asp Gly Met Ala Arg Glu Cys Pro
    50                  55                  60

Thr Thr Trp Leu Ser Pro Pro Ala Lys Pro Asp Phe Ala Gln Arg His
65                  70                  75                  80
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Ser Val Lys Pro Thr Ala Leu Gln Gly Gly Arg Trp Ser Arg Leu Gly
                85                  90                  95

Ala Ser Pro


<210> 324
<211> 96
<212> PRT
<213> Homo sapiens

<400> 324
Leu Pro Ala Thr Val Glu Phe Ala Val His Thr Phe Asn Gln Gln Ser
1               5                   10                  15

Lys Asp Tyr Tyr Ala Tyr Arg Leu Gly His Ile Leu Asn Ser Trp Lys
            20                  25                  30

Glu Gln Val Glu Ser Lys Thr Val Phe Ser Met Glu Leu Leu Leu Gly
        35                  40                  45

Arg Thr Arg Cys Gly Lys Phe Glu Asp Asp Ile Asp Asn Cys His Phe
    50                  55                  60

Gln Glu Ser Thr Glu Leu Asn Asn Thr Phe Thr Cys Phe Phe Thr Ile
65                  70                  75                  80

Ser Thr Arg Pro Trp Met Thr Gln Phe Ser Leu Leu Asn Lys Thr Cys
                85                  90                  95


<210> 325
<211> 166
<212> PRT
<213> Homo sapiens

<400> 325
Leu Leu Trp Ala Arg Gly Leu Gly Arg Ala Lys Ser Ala Val Pro Thr
1               5                   10                  15

Val Ser Thr Met Leu Gly Leu Pro Trp Lys Gly Gly Leu Ser Trp Ala
            20                  25                  30

Leu Leu Leu Leu Leu Leu Gly Ser Gln Ile Leu Leu Ile Tyr Ala Trp
        35                  40                  45

His Phe His Glu Gln Arg Asp Cys Asp Glu His Asn Val Met Ala Arg
    50                  55                  60

Tyr Leu Pro Ala Thr Val Glu Phe Ala Val His Thr Phe Asn Gln Gln
65                  70                  75                  80

Ser Lys Asp Tyr Tyr Ala Tyr Arg Leu Gly His Ile Leu Asn Ser Trp
                85                  90                  95
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Lys Glu Gln Val Glu Ser Lys Thr Val Phe Ser Met Glu Leu Leu Leu
            100                 105                 110

Gly Arg Thr Arg Cys Gly Lys Phe Glu Asp Asp Ile Asp Asn Cys His
        115                 120                 125

Phe Gln Glu Ser Thr Glu Leu Asn Asn Thr Phe Thr Cys Phe Phe Thr
    130                 135                 140

Ile Ser Thr Arg Pro Trp Met Thr Gln Phe Ser Leu Leu Asn Lys Thr
145                 150                 155                 160

Cys Leu Glu Gly Phe His
                165


<210> 326
<211> 214
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (200)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (205)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 326
Leu Glu Gln Lys Leu Glu Leu His Arg Gly Gly Gly Arg Ser Arg Thr
  1               5                  10                  15

Ser Gly Ser Pro Gly Leu Gln Glu Phe Gly Thr Arg Glu Glu Arg Gly
             20                  25                  30

Glu Gly Glu Gln Arg Thr Gly Arg Glu Phe Ser Gly Asn Gly Gly Arg
         35                  40                  45

Ala Val Glu Ala Ala Arg Met Arg Leu Leu Cys Gly Leu Trp Leu Trp
     50                  55                  60

Leu Ser Leu Leu Lys Val Leu Gln Ala Gln Thr Pro Thr Pro Leu Pro
 65                  70                  75                  80

Leu Pro Pro Pro Met Gln Ser Phe Gln Gly Asn Gln Phe Gln Gly Glu
                 85                  90                  95

Trp Phe Val Leu Gly Leu Ala Gly Asn Ser Phe Arg Pro Glu His Arg
            100                 105                 110

Ala Leu Leu Asn Ala Phe Thr Ala Thr Phe Glu Leu Ser Asp Asp Gly
        115                 120                 125

Arg Phe Glu Val Trp Asn Ala Met Thr Arg Gly Gln His Cys Asp Thr
    130                 135                 140
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Trp Ser Tyr Val Leu Ile Pro Ala Ala Gln Pro Gly Gln Phe Thr Val
145 150 155 160

Asp His Gly Val Gly Arg Ser Trp Leu Leu Pro Pro Gly Thr Leu Asp
165 170 175

Gln Phe Ile Cys Leu Gly Arg Ala Gln Gly Leu Ser Asp Asp Asn Ile
180 185 190

Val Phe Pro Asp Val Thr Gly Xaa Ala Leu Asp Leu Xaa Ser Leu Pro
195 200 205

Trp Val Ala Ala Pro Ala
210

<210> 327
<211> 181
<212> PRT
<213> Homo sapiens

<400> 327
Met Cys Val Cys Glu Arg Lys Arg Gly Arg Glu Lys Glu Gly Gly Val
1 5 10 15

Thr Pro Thr Met Thr Ser Asn Phe Pro Phe Cys Thr Leu Ile Leu Gly
20 25 30

Ile Ala Gln Ala Gln Ala Cys Pro Gly Cys Pro Gly Asp Trp Pro Gly
35 40 45

Leu Gly Ser Gly Val Gly Glu Gly Leu His His Ile Arg Thr Cys Arg
50 55 60

Thr Pro Ile Pro Cys Ser Pro Pro Ala Pro Ala Ala Ala Cys Leu Gly
65 70 75 80

Ser Gly His Ala Arg Leu Pro Cys Val Leu Arg Leu Trp Pro Val Pro
85 90 95

Ala Asn Leu Ser Ser Pro Phe Arg Leu Glu Ala Leu His Cys Ser Phe
100 105 110

Trp Ser Ser Pro Leu Leu Pro Ala Pro His Leu Ala Phe Phe Gly Phe
115 120 125

Arg Asp Leu Leu Thr Asp Phe Leu Leu Ala Ala Cys Leu Leu Thr Phe
130 135 140

Gln Lys Thr Pro Leu Glu Leu Pro Met Ala Val Val His Leu Leu Val
145 150 155 160

Ala Thr Pro Cys Tyr Gln Met Leu Asp Asn Leu Pro Leu Pro Ser Ala
165 170 175

Ala Ala Asn Trp Cys
180

<210> 328
<211> 195
<212> PRT
<213> Homo sapiens

<400> 328
Tyr Leu Trp Gly Arg Pro Arg Leu Arg Met Arg Ala Gly Thr Ser Pro
1 5 10 15

Ser Ala Pro Trp Gly Glu Lys Arg Glu Lys Leu Gly His Lys Leu Pro
20 25 30

Val Ala Leu Gln Gly Tyr His Pro Trp Ile Leu Leu Glu Cys Thr Val
35 40 45

Phe Trp Ala Arg Val Val Leu Ala Cys Phe Ser Leu Tyr Leu Ile Arg
50 55 60

Gly Pro Asn Cys Ile Asn Arg Gln Pro Glu Pro Thr Tyr Gln Lys Ala
65 70 75 80

Cys Asn Leu Asp Cys Ser Ser Asp Phe Gly Gln Glu Arg Ala Pro Ala
85 90 95

Trp Glu Leu Leu Gly Pro Glu Ser Glu Gln Arg Leu Arg Glu Tyr Thr
100 105 110

Ala Gln Gly Leu Gln Ser Leu Ala Ser Ser His Arg Trp Arg Gln Phe
115 120 125

Lys Thr Glu Gly Lys Met Arg Gly Gly Ala Ser Pro Leu Pro Trp Leu
130 135 140

Ile Cys Phe Trp Leu Cys Ser Tyr Lys Gly Ser Asp Asn Ser Leu Lys
145 150 155 160

Pro Val Val Pro Gly Pro Thr Leu Cys Pro Gln Ser Leu Val Ser Pro
165 170 175

Ser Val His Pro Ser Thr Arg Ser Ala Ser Leu Gly Arg His Arg Ala
180 185 190

Glu Ala Ala
195

<210> 329
<211> 50
<212> PRT
<213> Homo sapiens

<400> 329
Met Pro Gly Ile Leu Ala Gly Ile Pro Val Lys Asp Leu Cys Leu Ser
1 5 10 15

Leu Leu Gln Gly Phe Arg Leu Leu Leu Leu Cys Val Cys Pro Gly Trp
20 25 30

Leu Ser Gly Trp Met Gly Gly Gln Lys Gly Ser Pro Arg Ile Val Asp

35 40 45

Ile Gly
50

<210> 330
<211> 90
<212> PRT
<213> Homo sapiens

<400> 330
Ala Lys Gly Glu Glu Arg Lys Glu Ala Phe Ser Leu Lys Met Val Gln
1 5 10 15

Leu Ser Ser Glu Pro Ile Ser Phe Gly Leu Met Tyr Leu Tyr Leu Gly
20 25 30

Val Phe Phe His Leu Ile Tyr Pro Gly Ala Leu Ser Ile Thr Thr Leu
35 40 45

Gly Lys His Ser His Pro Phe Phe Thr Ala Glu Gln Asn Ser Thr Val
50 55 60

Trp Met Glu His Thr Leu Phe His Gln Ser Pro Val Ala Ser His Leu
65 70 75 80

Val Cys Phe Gln Ser Phe Ala Phe Ser Glu
85 90

<210> 331
<211> 56
<212> PRT
<213> Homo sapiens

<400> 331
Gly Pro Ala His Pro Ala Ser Pro Pro Leu Met Thr Leu Ser Leu Gln
1 5 10 15

Leu Ala Glu Leu Val His Phe Val Cys Ala Phe Gln Ser Gln Trp Thr
20 25 30

Gly Val Tyr Pro Met Met Pro Pro Leu Lys Pro Thr Glu Pro Leu Cys
35 40 45

Phe Ala Cys Val Pro Cys Arg Val
50 55

<210> 332
<211> 18
<212> PRT
<213> Homo sapiens

<400> 332
Met Leu Leu Glu Val Tyr Gly Asp Ser Ile Ser Val Thr Val Ala Ile
1 5 10 15

Pro Leu

<210> 333
<211> 19
<212> PRT
<213> Homo sapiens

<400> 333
Met His Ser Pro Cys Gln Ser Lys Ala Ala Asp Gly Leu Gly Lys Ser
1 5 10 15

Glu Thr Glu

<210> 334
<211> 10
<212> PRT
<213> Homo sapiens

<400> 334
Met Leu Lys Ser Leu Gly Leu Ser Thr Asn
1 5 10

<210> 335
<211> 200
<212> PRT
<213> Homo sapiens

<400> 335
Ala Gln Arg Leu Ala Glu Glu Cys Phe Tyr Met Leu Leu Glu Val Tyr
1 5 10 15

Gly Asp Ser Ile Ser Val Thr Val Ala Ile Pro Leu Met His Ser Pro
20 25 30

Cys Gln Ser Lys Ala Ala Asp Gly Leu Gly Lys Ser Glu Thr Glu Met
35 40 45

Leu Lys Ser Leu Gly Leu Ser Thr Asn Met Ser Pro Phe His Leu Leu
50 55 60

Gly Leu Lys Val Phe Leu Thr Trp Ala Leu Thr Leu Ala Gln Ile Cys
65 70 75 80

Leu Tyr Phe Phe Glu Val Gln Pro Leu Gly Leu Leu Ala Leu Asn Phe
85 90 95

Phe Cys Thr Ala Thr Ala Gly Leu Lys Glu Leu Cys Met His Pro Pro
100 105 110

Ser Leu Ala Phe Thr Pro Glu Phe His Thr Ser Leu Ser Pro Leu Ala
115 120 125

Ile Pro Ser Phe Cys Gly Thr Ser Val Ser Leu Ser Asn Ser His Thr
130 135 140

Ile Pro Leu Ser Leu Tyr Leu Pro Phe Pro Ser Lys Ser Arg Met Pro
145 150 155 160

Asp Thr Leu His Leu Leu Val His Ser Leu Pro Leu Val His Ser Gln
165 170 175

Val Leu Pro Val Lys Asp Val Thr Ile Glu Trp Pro Leu Cys Gln Arg
180 185 190

Cys Leu Gly Ser Thr Cys His Gln
195 200

<210> 336
<211> 99
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (94)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (99)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 336
Trp Ile Pro Arg Ala Ala Gly Ile Arg His Glu Val Gln Val Ser Leu
1 5 10 15

Phe Gln Met Phe Cys Phe Ser Ser Ile Phe Cys Ser His Glu His Thr
20 25 30

His Leu Pro Gly Thr Phe Trp Leu Phe Leu Phe Leu Phe Leu Ile Leu
35 40 45

Pro Pro Ser Cys Pro Cys Phe Leu Pro Phe Ser Leu Ala Ile Glu Thr
50 55 60

Val Arg Trp Pro Cys Trp His His Pro Thr Ser Phe Glu Leu Cys Tyr
65 70 75 80

Pro Gly Thr Ser Ile Tyr Tyr Ala Ser Arg Gly Gly Pro Xaa Pro Asn
85 90 95

Ser Glu Xaa

<210> 337
<211> 96
<212> PRT
<213> Homo sapiens

<220>
<221> SITE

<222> (1)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (3)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 337
Xaa Asn Xaa Lys Ser Pro Leu Thr Ile Gly Asn Lys Ser Trp Ser Ser
1 5 10 15

Thr Ala Val Ala Ala Ala Leu Glu Leu Val Asp Pro Pro Gly Cys Arg
20 25 30

Asn Ser Ala Arg Asp Ser Pro Glu Leu Val His Leu Gly Lys Gly Arg
35 40 45

Pro Arg Lys Leu Met Thr Tyr Leu Phe Cys Ser Ser Ile Ser Leu Leu
50 55 60

Leu Leu Lys Val His Ser Ser Gly His Gln Asp Ile Arg Lys Ala Lys
65 70 75 80

Ser Lys Val Pro Arg Leu Leu Ile Ile Gln Cys Pro Gln Gln Arg Glu
85 90 95

<210> 338
<211> 54
<212> PRT
<213> Homo sapiens

<400> 338
Gly Pro Glu Glu Asn Leu Ser Pro Ser Thr Pro Ser Gln Met Pro Thr
1 5 10 15

Ile Trp Val Lys Leu Cys Leu Leu Gln Val Cys His Gly Leu Phe Pro
20 25 30

Leu Leu Lys His Trp Ser Gln Pro Met Pro Leu Cys Val Thr Leu Ala
35 40 45

Pro Val Ser Tyr Trp Leu
50

<210> 339
<211> 287
<212> PRT
<213> Homo sapiens

<400> 339
Pro Arg Val Arg Lys Glu Pro Glu Ala Met Gln Trp Leu Arg Val Arg
1 5 10 15

Glu Ser Pro Gly Glu Ala Thr Gly His Arg Val Thr Met Gly Thr Ala
20 25 30

Ala Leu Gly Pro Val Trp Ala Ala Leu Leu Leu Phe Leu Leu Met Cys
35 40 45

Glu Ile Pro Met Val Glu Leu Thr Phe Asp Arg Ala Val Ala Ser Asp
50 55 60

Cys Gln Arg Cys Cys Asp Ser Glu Asp Pro Leu Asp Pro Ala His Val
65 70 75 80

Ser Ser Ala Ser Ser Ser Gly Arg Pro His Ala Leu Pro Glu Ile Arg
85 90 95

Pro Tyr Ile Asn Ile Thr Ile Leu Lys Gly Asp Lys Gly Asp Pro Gly
100 105 110

Pro Met Gly Leu Pro Gly Tyr Met Gly Arg Glu Gly Pro Gln Gly Glu
115 120 125

Pro Gly Pro Gln Gly Ser Lys Gly Asp Lys Gly Glu Met Gly Ser Pro
130 135 140

Gly Ala Pro Cys Gln Lys Arg Phe Phe Ala Phe Ser Val Gly Arg Lys
145 150 155 160

Thr Ala Leu His Ser Gly Glu Asp Phe Gln Thr Leu Leu Phe Glu Arg
165 170 175

Val Phe Val Asn Leu Asp Gly Cys Phe Asp Met Ala Thr Gly Gln Phe
180 185 190

Ala Ala Pro Leu Arg Gly Ile Tyr Phe Phe Ser Leu Asn Val His Ser
195 200 205

Trp Asn Tyr Lys Glu Thr Tyr Val His Ile Met His Asn Gln Lys Glu
210 215 220

Ala Val Ile Leu Tyr Ala Gln Pro Ser Glu Arg Ser Ile Met Gln Ser
225 230 235 240

Gln Ser Val Met Leu Asp Leu Ala Tyr Gly Asp Arg Val Trp Val Arg
245 250 255

Leu Phe Lys Arg Gln Arg Glu Asn Ala Ile Tyr Ser Asn Asp Phe Asp
260 265 270

Thr Tyr Ile Thr Phe Ser Gly His Leu Ile Lys Ala Glu Asp Asp
275 280 285

<210> 340
<211> 339
<212> PRT
<213> Homo sapiens

<400> 340
Met Leu Tyr Pro Gly Ser Val Tyr Leu Leu Gln Lys Ala Leu Met Pro

1 5 10 15

Val Leu Leu Gln Gly Gln Ala Arg Leu Val Glu Glu Cys Asn Gly Arg
20 25 30

Arg Ala Lys Leu Leu Ala Cys Asp Gly Asn Glu Ile Asp Thr Met Phe
35 40 45

Val Asp Arg Arg Gly Thr Ala Glu Pro Gln Gly Gln Lys Leu Val Ile
50 55 60

Cys Cys Glu Gly Asn Ala Gly Phe Tyr Glu Val Gly Cys Val Ser Thr
65 70 75 80

Pro Leu Glu Ala Gly Tyr Ser Val Leu Gly Trp Asn His Pro Gly Phe
85 90 95

Ala Gly Ser Thr Gly Val Pro Phe Pro Gln Asn Glu Ala Asn Ala Met
100 105 110

Asp Val Val Val Gln Phe Ala Ile His Arg Leu Gly Phe Gln Pro Gln
115 120 125

Asp Ile Ile Ile Tyr Ala Trp Ser Ile Gly Gly Phe Thr Ala Thr Trp
130 135 140

Ala Ala Met Ser Tyr Pro Asp Val Ser Ala Met Ile Leu Asp Ala Ser
145 150 155 160

Phe Asp Asp Leu Val Pro Leu Ala Leu Lys Val Met Pro Asp Ser Trp
165 170 175

Arg Gly Leu Val Thr Arg Thr Val Arg Gln His Leu Asn Leu Asn Asn
180 185 190

Ala Glu Gln Leu Cys Arg Tyr Gln Gly Pro Val Leu Leu Ile Arg Arg
195 200 205

Thr Lys Asp Glu Ile Ile Thr Thr Thr Val Pro Glu Asp Ile Met Ser
210 215 220

Asn Arg Gly Asn Asp Leu Leu Leu Lys Leu Leu Gln His Arg Tyr Pro
225 230 235 240

Arg Val Met Ala Glu Glu Gly Leu Arg Val Val Arg Gln Trp Leu Glu
245 250 255

Ala Ser Ser Gln Leu Glu Glu Ala Ser Ile Tyr Ser Arg Trp Glu Val
260 265 270

Glu Glu Asp Trp Cys Leu Ser Val Leu Arg Ser Tyr Gln Ala Glu His
275 280 285

Gly Pro Asp Phe Pro Trp Ser Val Gly Glu Asp Met Ser Ala Asp Gly
290 295 300

Arg Arg Gln Leu Ala Leu Phe Leu Ala Arg Lys His Leu His Asn Phe
305 310 315 320

Glu Ala Thr His Cys Thr Pro Leu Pro Ala Gln Asn Phe Gln Met Pro
325 330 335

Trp His Leu

<210> 341
<211> 127
<212> PRT
<213> Homo sapiens

<400> 341
Val Cys Pro Lys Trp Cys Arg Phe Leu Thr Met Leu Gly His Cys Cys
1 5 10 15

Tyr Phe Trp Gln Val Trp Pro Ala Ser Glu Ala Leu Ala Ala Gly Pro
20 25 30

Thr Pro Ser Thr Gly Ser Ser Ser Pro Ser Trp Lys Gln His Ile Gly
35 40 45

Thr Ser Leu Gln Lys Thr Arg Gly Ser Leu Pro Thr Thr Thr Leu Thr
50 55 60

Ser Gly Ala Gly Gln Ser Thr Ser Thr Gly Lys Asn Pro Ala Ala Gly
65 70 75 80

Arg Ser Leu Glu Gly Ala Leu Pro Ala Gly Val Trp Pro Cys Phe Ala
85 90 95

Gln Ser Pro Cys Thr Gly Gly Gln Gln Thr Pro Ser Ser Thr Gly Leu
100 105 110

Arg Ser Cys Leu Val Arg Ser Pro Ala Thr Trp Trp Arg Thr Pro
115 120 125

<210> 342
<211> 554
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (16)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (109)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 342
Trp Ile Pro Arg Ala Ala Gly Ile Arg His Glu Ile Tyr Arg Glu Xaa
1 5 10 15

Asp Ser Glu Arg Ala Pro Ala Ser Val Pro Glu Thr Pro Thr Ala Val
20 25 30

Thr Ala Pro His Ser Ser Ser Trp Asp Thr Tyr Tyr Gln Pro Arg Ala
35 40 45

Leu Glu Lys His Ala Asp Ser Ile Leu Ala Leu Ala Ser Val Phe Trp
50 55 60

Ser Ile Ser Tyr Tyr Ser Ser Pro Phe Ala Phe Phe Tyr Leu Tyr Arg
65 70 75 80

Lys Gly Tyr Leu Ser Leu Ser Lys Val Val Pro Phe Ser His Tyr Ala
85 90 95

Gly Thr Leu Leu Leu Leu Leu Ala Gly Val Ala Cys Xaa Arg Gly Ile
100 105 110

Gly Arg Trp Thr Asn Pro Gln Tyr Arg Gln Phe Ile Thr Ile Leu Glu
115 120 125

Ala Thr His Arg Asn Gln Ser Ser Glu Asn Lys Arg Gln Leu Ala Asn
130 135 140

Tyr Asn Phe Asp Phe Arg Ser Trp Pro Val Asp Phe His Trp Glu Glu
145 150 155 160

Pro Ser Ser Arg Lys Glu Ser Arg Gly Gly Pro Ser Arg Arg Gly Val
165 170 175

Ala Leu Leu Arg Pro Glu Pro Leu His Arg Gly Thr Ala Asp Thr Leu
180 185 190

Leu Asn Arg Val Lys Lys Leu Pro Cys Gln Ile Thr Ser Tyr Leu Val
195 200 205

Ala His Thr Leu Gly Arg Arg Met Leu Tyr Pro Gly Ser Val Tyr Leu
210 215 220

Leu Gln Lys Ala Leu Met Pro Val Leu Leu Gln Gly Gln Ala Arg Leu
225 230 235 240

Val Glu Glu Cys Asn Gly Arg Arg Ala Lys Leu Leu Ala Cys Asp Gly
245 250 255

Asn Glu Ile Asp Thr Met Phe Val Asp Arg Arg Gly Thr Ala Glu Pro
260 265 270

Gln Gly Gln Lys Leu Val Ile Cys Cys Glu Gly Asn Ala Gly Phe Tyr
275 280 285

Glu Val Gly Cys Val Ser Thr Pro Leu Glu Ala Gly Tyr Ser Val Leu
290 295 300

Gly Trp Asn His Pro Gly Phe Ala Gly Ser Thr Gly Val Pro Phe Pro
305 310 315 320

Gln Asn Glu Ala Asn Ala Met Asp Val Val Val Gln Phe Ala Ile His
325 330 335

Arg Leu Gly Phe Gln Pro Gln Asp Ile Ile Ile Tyr Ala Trp Ser Ile

340 345 350

Gly Gly Phe Thr Ala Thr Trp Ala Ala Met Ser Tyr Pro Asp Val Ser
355 360 365

Ala Met Ile Leu Asp Ala Ser Phe Asp Asp Leu Val Pro Leu Ala Leu
370 375 380

Lys Val Met Pro Asp Ser Trp Arg Gly Leu Val Thr Arg Thr Val Arg
385 390 395 400

Gln His Leu Asn Leu Asn Asn Ala Glu Gln Leu Cys Arg Tyr Gln Gly
405 410 415

Pro Val Leu Leu Ile Arg Arg Thr Lys Asp Glu Ile Ile Thr Thr Thr
420 425 430

Val Pro Glu Asp Ile Met Ser Asn Arg Gly Asn Asp Leu Leu Leu Lys
435 440 445

Leu Leu Gln His Arg Tyr Pro Arg Val Met Ala Glu Glu Gly Leu Arg
450 455 460

Val Val Arg Gln Trp Leu Glu Ala Ser Ser Gln Leu Glu Glu Ala Ser
465 470 475 480

Ile Tyr Ser Arg Trp Glu Val Glu Glu Asp Trp Cys Leu Ser Val Leu
485 490 495

Arg Ser Tyr Gln Ala Glu His Gly Pro Asp Phe Pro Trp Ser Val Gly
500 505 510

Glu Asp Met Ser Ala Asp Gly Arg Arg Gln Leu Ala Leu Phe Leu Ala
515 520 525

Arg Lys His Leu His Asn Phe Glu Ala Thr His Cys Thr Pro Leu Pro
530 535 540

Ala Gln Asn Phe Gln Met Pro Trp His Leu
545 550

<210> 343
<211> 225
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (5)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 343
His Glu Arg Ala Xaa Gly Pro Ser Arg Gly His Gly Glu Leu Leu Ser
1 5 10 15

Cys Val Leu Gly Pro Arg Leu Tyr Lys Ile Tyr Arg Glu Arg Asp Ser
20 25 30

Glu Arg Ala Pro Ala Ser Val Pro Glu Thr Pro Thr Ala Val Thr Ala
35 40 45

Pro His Ser Ser Ser Trp Asp Thr Tyr Tyr Gln Pro Arg Ala Leu Glu
50 55 60

Lys His Ala Asp Ser Ile Leu Ala Leu Ala Ser Val Phe Trp Ser Ile
65 70 75 80

Ser Tyr Tyr Ser Ser Pro Phe Ala Phe Phe Tyr Leu Tyr Arg Lys Gly
85 90 95

Tyr Leu Ser Leu Ser Lys Val Val Pro Phe Ser His Tyr Ala Gly Thr
100 105 110

Leu Leu Leu Leu Leu Ala Gly Val Ala Cys Ser Glu Ala Leu Ala Ala
115 120 125

Gly Pro Thr Pro Ser Thr Gly Ser Ser Ser Pro Ser Trp Lys Gln His
130 135 140

Ile Gly Thr Ser Leu Gln Lys Thr Arg Gly Ser Leu Pro Thr Thr Thr
145 150 155 160

Leu Thr Ser Gly Ala Gly Gln Ser Thr Ser Thr Gly Lys Asn Pro Ala
165 170 175

Ala Gly Arg Ser Leu Glu Gly Ala Leu Pro Ala Gly Val Trp Pro Cys
180 185 190

Phe Ala Gln Ser Pro Cys Thr Gly Gly Gln Gln Thr Pro Ser Ser Thr
195 200 205

Gly Leu Arg Ser Cys Leu Val Arg Ser Pro Ala Thr Trp Trp Arg Thr
210 215 220

Pro
225

<210> 344
<211> 299
<212> PRT
<213> Homo sapiens

<400> 344
Met Phe Lys Arg His Gln Arg Leu Lys Lys Asp Ser Thr Gln Ala Glu
1 5 10 15

Glu Asp Leu Ser Glu Gln Glu Gln Asn Gln Leu Asn Val Leu Lys Lys
20 25 30

His Gly Tyr Val Val Gly Arg Val Gly Arg Thr Phe Leu Tyr Ser Glu
35 40 45

Glu Gln Lys Asp Asn Ile Pro Phe Glu Phe Asp Ala Asp Ser Leu Ala
50 55 60

Phe Asp Met Glu Asn Asp Pro Val Met Gly Thr His Lys Ser Thr Lys

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65                  70                  75                  80

Gln Val Glu Leu Thr Ala Gln Asp Val Lys Asp Ala His Trp Phe Tyr
                85                  90                  95

Asp Thr Pro Gly Ile Thr Lys Glu Asn Cys Ile Leu Asn Leu Leu Thr
            100                 105                 110

Glu Lys Glu Val Asn Ile Val Leu Pro Thr Gln Ser Ile Val Pro Arg
        115                 120                 125

Thr Phe Val Leu Lys Pro Gly Met Val Leu Phe Leu Gly Ala Ile Gly
    130                 135                 140

Arg Ile Asp Phe Leu Gln Gly Asn Gln Ser Ala Trp Phe Thr Val Val
145                 150                 155                 160

Ala Ser Asn Ile Leu Pro Val His Ile Thr Ser Leu Asp Arg Ala Asp
                165                 170                 175

Ala Leu Tyr Gln Lys His Ala Gly His Thr Leu Leu Gln Ile Pro Met
            180                 185                 190

Gly Gly Lys Glu Arg Met Ala Gly Phe Pro Pro Leu Val Ala Glu Asp
        195                 200                 205

Ile Met Leu Lys Glu Gly Leu Gly Ala Ser Glu Ala Val Ala Asp Ile
    210                 215                 220

Lys Phe Ser Ser Ala Gly Trp Val Ser Val Thr Pro Asn Phe Lys Asp
225                 230                 235                 240

Arg Leu His Leu Arg Gly Tyr Thr Pro Glu Gly Thr Val Leu Thr Val
                245                 250                 255

Arg Pro Pro Leu Leu Pro Tyr Ile Val Asn Ile Lys Gly Gln Arg Ile
            260                 265                 270

Lys Lys Ser Val Ala Tyr Lys Thr Lys Lys Pro Pro Ser Leu Met Tyr
        275                 280                 285

Asn Val Arg Lys Lys Lys Gly Lys Ile Asn Val
    290                 295
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<210> 345
<211> 314
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (147)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (211)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 345

Met Leu Pro Ala Arg Leu Pro Phe Arg Leu Leu Ser Leu Phe Leu Arg
1 5 10 15

Gly Ser Ala Pro Thr Ala Ala Arg His Gly Leu Arg Glu Pro Leu Leu
20 25 30

Glu Arg Arg Cys Ala Ala Ala Ser Ser Phe Gln His Ser Ser Ser Leu
35 40 45

Gly Arg Glu Leu Pro Tyr Asp Pro Val Asp Thr Glu Gly Phe Gly Glu
50 55 60

Gly Gly Asp Met Gln Glu Arg Phe Leu Phe Pro Glu Tyr Ile Leu Asp
65 70 75 80

Pro Glu Pro Gln Pro Thr Arg Glu Lys Gln Leu Gln Glu Leu Gln Gln
85 90 95

Gln Gln Glu Glu Glu Glu Arg Gln Arg Gln Gln Arg Arg Glu Glu Arg
100 105 110

Arg Gln Gln Asn Leu Arg Ala Arg Ser Arg Glu His Pro Val Val Gly
115 120 125

His Pro Asp Pro Ala Leu Pro Pro Ser Gly Val Asn Cys Ser Gly Cys
130 135 140

Gly Ala Xaa Leu His Cys Gln Asp Ala Gly Val Pro Gly Tyr Leu Pro
145 150 155 160

Arg Glu Lys Phe Leu Arg Thr Ala Glu Ala Asp Gly Gly Leu Ala Arg
165 170 175

Thr Val Cys Gln Arg Cys Trp Leu Leu Ser His His Arg Arg Ala Leu
180 185 190

Arg Leu Gln Val Ser Arg Glu Gln Tyr Leu Glu Leu Val Ser Ala Ala
195 200 205

Leu Arg Xaa Pro Gly Pro Ser Leu Val Leu Tyr Met Val Asp Leu Leu
210 215 220

Asp Leu Pro Asp Ala Leu Leu Pro Asp Leu Pro Ala Leu Val Gly Pro
225 230 235 240

Lys Gln Leu Ile Val Leu Gly Asn Lys Val Asp Leu Leu Pro Gln Asp
245 250 255

Ala Pro Gly Tyr Arg Gln Arg Leu Arg Glu Arg Leu Trp Glu Asp Cys
260 265 270

Ala Arg Ala Gly Leu Leu Leu Ala Pro Gly Thr Lys Gly His Ser Ala
275 280 285

Pro Ser Arg Thr Ser His Arg Thr Gly Arg Ile Arg Ile Arg Arg Thr
290 295 300

Gly Pro Ala Gln Trp Ser Gly Thr Cys Gly
305 310

<210> 346
<211> 380
<212> PRT
<213> Homo sapiens

<400> 346
Pro Ser Phe Arg Arg Glu Arg Val Glu Thr Gly Gly Gly Gly Pro Val
1 5 10 15

Thr His Gly Thr Glu Gly Pro Phe Leu Pro Leu Pro Gly Gly Thr Arg
20 25 30

Met Asn Met Thr Gln Ala Arg Val Leu Val Ala Ala Val Val Gly Leu
35 40 45

Val Ala Val Leu Leu Tyr Ala Ser Ile His Lys Ile Glu Glu Gly His
50 55 60

Leu Ala Val Tyr Tyr Arg Gly Gly Ala Leu Leu Thr Ser Pro Ser Gly
65 70 75 80

Pro Gly Tyr His Ile Met Leu Pro Phe Ile Thr Thr Phe Arg Ser Val
85 90 95

Gln Thr Thr Leu Gln Thr Asp Glu Val Lys Asn Val Pro Cys Gly Thr
100 105 110

Ser Gly Gly Val Met Ile Tyr Ile Asp Arg Ile Glu Val Val Asn Met
115 120 125

Leu Ala Pro Tyr Ala Val Phe Asp Ile Val Arg Asn Tyr Thr Ala Asp
130 135 140

Tyr Asp Lys Thr Leu Ile Phe Asn Lys Ile His His Glu Leu Asn Gln
145 150 155 160

Phe Cys Ser Ala His Thr Leu Gln Glu Val Tyr Ile Glu Leu Phe Asp
165 170 175

Gln Ile Asp Glu Asn Leu Lys Gln Ala Leu Gln Lys Asp Leu Asn Leu
180 185 190

Met Ala Pro Gly Leu Thr Ile Gln Ala Val Arg Val Thr Lys Pro Lys
195 200 205

Ile Pro Glu Ala Ile Arg Arg Asn Phe Glu Leu Met Glu Ala Glu Lys
210 215 220

Thr Lys Leu Leu Ile Ala Ala Gln Lys Gln Lys Val Val Glu Lys Glu
225 230 235 240

Ala Glu Thr Glu Arg Lys Lys Ala Val Ile Glu Ala Glu Lys Ile Ala
245 250 255

Gln Val Ala Lys Ile Arg Phe Gln Gln Lys Val Met Glu Lys Glu Thr

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            260                 265                 270

Glu Lys Arg Ile Ser Glu Ile Glu Asp Ala Ala Phe Leu Ala Arg Glu
        275                 280                 285

Lys Ala Lys Ala Asp Ala Glu Tyr Tyr Ala Ala His Lys Tyr Ala Thr
    290                 295                 300

Ser Asn Lys His Lys Leu Thr Pro Glu Tyr Leu Glu Leu Lys Lys Tyr
305                 310                 315                 320

Gln Ala Ile Ala Ser Asn Ser Lys Ile Tyr Phe Gly Ser Asn Ile Pro
                325                 330                 335

Asn Met Phe Val Asp Ser Ser Cys Ala Leu Lys Tyr Ser Asp Ile Arg
            340                 345                 350

Thr Gly Arg Glu Ser Ser Leu Pro Ser Lys Glu Ala Leu Glu Pro Ser
        355                 360                 365

Gly Glu Asn Val Ile Gln Asn Lys Glu Ser Thr Gly
    370                 375                 380


<210> 347
<211> 422
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (328)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 347
Trp Ser Thr Gly Asn Ala Ser Trp Glu Lys Lys Asp Asn Phe Ile Leu
  1               5                  10                  15

Ser Ala Asp Phe Glu Met Met Gly Leu Gly Asn Gly Arg Arg Ser Met
            20                  25                  30

Lys Ser Pro Pro Leu Val Leu Ala Ala Leu Val Ala Cys Ile Ile Val
        35                  40                  45

Leu Gly Phe Asn Tyr Trp Ile Ala Ser Ser Arg Ser Val Asp Leu Gln
    50                  55                  60

Thr Arg Ile Met Glu Leu Glu Gly Arg Val Arg Arg Arg Ala Ala Glu
65                  70                  75                  80

Arg Gly Ala Val Glu Leu Lys Lys Asn Glu Phe Gln Gly Glu Leu Glu
                85                  90                  95

Lys Gln Arg Glu Gln Leu Asp Lys Ile Gln Ser Ser His Asn Phe Gln
            100                 105                 110

Leu Glu Ser Val Asn Lys Leu Tyr Gln Asp Glu Lys Ala Val Leu Val
        115                 120                 125
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Asn Asn Ile Thr Thr Gly Glu Arg Leu Ile Arg Val Leu Gln Asp Gln
130 135 140

Leu Lys Thr Leu Gln Arg Asn Tyr Gly Arg Leu Gln Gln Asp Val Leu
145 150 155 160

Gln Phe Gln Lys Asn Gln Thr Asn Leu Glu Arg Lys Phe Ser Tyr Asp
165 170 175

Leu Ser Gln Cys Ile Asn Gln Met Lys Glu Val Lys Glu Gln Cys Glu
180 185 190

Glu Arg Ile Glu Glu Val Thr Lys Lys Gly Asn Glu Ala Val Ala Ser
195 200 205

Arg Asp Leu Ser Glu Asn Asn Asp Gln Arg Gln Gln Leu Gln Ala Leu
210 215 220

Ser Glu Pro Gln Pro Arg Leu Gln Ala Ala Gly Leu Pro His Thr Glu
225 230 235 240

Val Pro Gln Gly Lys Gly Asn Val Leu Gly Asn Ser Lys Ser Gln Thr
245 250 255

Pro Ala Pro Ser Ser Glu Val Val Leu Asp Ser Lys Arg Gln Val Glu
260 265 270

Lys Glu Glu Thr Asn Glu Ile Gln Val Val Asn Glu Glu Pro Gln Arg
275 280 285

Asp Arg Leu Pro Gln Glu Pro Gly Arg Glu Gln Val Val Glu Asp Arg
290 295 300

Pro Val Gly Gly Arg Gly Phe Gly Gly Ala Gly Glu Leu Gly Gln Thr
305 310 315 320

Pro Gln Val Gln Ala Ala Leu Xaa Val Ser Gln Glu Asn Pro Glu Met
325 330 335

Glu Gly Pro Glu Arg Asp Gln Leu Val Ile Pro Asp Gly Gln Glu Glu
340 345 350

Glu Gln Glu Ala Ala Gly Glu Gly Arg Asn Gln Gln Lys Leu Arg Gly
355 360 365

Glu Asp Asp Tyr Asn Met Asp Glu Asn Glu Ala Glu Ser Glu Thr Asp
370 375 380

Lys Gln Ala Ala Leu Ala Gly Asn Asp Arg Asn Ile Asp Val Phe Asn
385 390 395 400

Val Glu Asp Gln Lys Arg Asp Thr Ile Asn Leu Leu Asp Gln Arg Glu
405 410 415

Lys Arg Asn His Thr Leu
420

<210> 348

<211> 14
<212> PRT
<213> Homo sapiens

<400> 348
Ser Leu His Arg Phe Val Leu Ser Gln Ala Lys Asp Glu Leu
1 5 10

<210> 349
<211> 19
<212> PRT
<213> Homo sapiens

<400> 349
Phe Ile Lys Phe Phe Ala Pro Trp Cys Gly His Cys Lys Ala Leu Ala
1 5 10 15

Pro Thr Trp

<210> 350
<211> 19
<212> PRT
<213> Homo sapiens

<400> 350
Phe Ile Lys Phe Tyr Ala Pro Trp Cys Gly His Cys Lys Thr Leu Ala
1 5 10 15

Pro Thr Trp

<210> 351
<211> 363
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (42)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 351
Arg Arg Gly Arg Gly Val Pro Gly Pro Arg Gly Arg Arg Arg Leu Trp
1 5 10 15

Ser Ala Ala Cys Gly His Cys Gln Arg Leu Gln Pro Thr Trp Asn Asp
20 25 30

Leu Gly Asp Lys Tyr Asn Ser Met Glu Xaa Ala Lys Val Tyr Val Ala
35 40 45

Lys Val Asp Cys Thr Ala His Ser Asp Val Cys Ser Ala Gln Gly Val
50 55 60

Arg Gly Tyr Pro Thr Leu Lys Leu Phe Lys Pro Gly Gln Glu Ala Val

65 70 75 80

Lys Tyr Gln Gly Pro Arg Asp Phe Gln Thr Leu Glu Asn Trp Met Leu
85 90 95

Gln Thr Leu Asn Glu Glu Pro Val Thr Pro Glu Pro Glu Val Glu Pro
100 105 110

Pro Ser Ala Pro Glu Leu Lys Gln Gly Leu Tyr Glu Leu Ser Ala Ser
115 120 125

Asn Phe Glu Leu His Val Ala Gln Gly Asp His Phe Ile Lys Phe Phe
130 135 140

Ala Pro Trp Cys Gly His Cys Lys Ala Leu Ala Pro Thr Trp Glu Gln
145 150 155 160

Leu Ala Leu Gly Leu Glu His Ser Glu Thr Val Lys Ile Gly Lys Val
165 170 175

Asp Cys Thr Gln His Tyr Glu Leu Cys Ser Gly Asn Gln Val Arg Gly
180 185 190

Tyr Pro Thr Leu Leu Trp Phe Arg Asp Gly Lys Lys Val Asp Gln Tyr
195 200 205

Lys Gly Lys Arg Asp Leu Glu Ser Leu Arg Glu Tyr Val Glu Ser Gln
210 215 220

Leu Gln Arg Thr Glu Thr Gly Ala Thr Glu Thr Val Thr Pro Ser Glu
225 230 235 240

Ala Pro Val Leu Ala Ala Glu Pro Glu Ala Asp Lys Gly Thr Val Leu
245 250 255

Ala Leu Thr Glu Asn Asn Phe Asp Asp Thr Ile Ala Glu Gly Ile Thr
260 265 270

Phe Ile Lys Phe Tyr Ala Pro Trp Cys Gly His Cys Lys Thr Leu Ala
275 280 285

Pro Thr Trp Glu Glu Leu Ser Lys Lys Glu Phe Pro Gly Leu Ala Gly
290 295 300

Val Lys Ile Ala Glu Val Asp Cys Thr Ala Glu Arg Asn Ile Cys Ser
305 310 315 320

Lys Tyr Ser Val Arg Gly Tyr Pro Thr Leu Leu Leu Phe Arg Gly Gly
325 330 335

Lys Lys Val Ser Glu His Ser Gly Gly Arg Asp Leu Asp Ser Leu His
340 345 350

Arg Phe Val Leu Ser Gln Ala Lys Asp Glu Leu
355 360

<210> 352
<211> 93

<212> PRT
<213> Homo sapiens

<400> 352
Met Arg Pro Gln Gly Pro Ala Ala Ser Pro Gln Arg Leu Arg Gly Leu
1 5 10 15

Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser Ala Ser Glu
20 25 30

Ile Pro Lys Gly Lys Gln Lys Ala His Ser Gly Arg Gly Arg Trp Trp
35 40 45

Thr Cys Ile Met Glu Cys Ala Tyr Lys Gly Gln Gln Glu Cys Leu Val
50 55 60

Glu Thr Gly Ala Leu Gly Pro Met Ala Phe Arg Val His Leu Gly Ser
65 70 75 80

Gln Val Gly Met Asp Ser Lys Glu Lys Arg Gly Asn Val
85 90

<210> 353
<211> 273
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (210)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 353
Glu Thr Arg Val Lys Thr Ser Leu Glu Leu Leu Arg Thr Gln Leu Glu
1 5 10 15

Pro Thr Gly Thr Val Gly Asn Thr Ile Met Thr Ser Gln Pro Val Pro
20 25 30

Asn Glu Thr Ile Ile Val Leu Pro Ser Asn Val Ile Asn Phe Ser Gln
35 40 45

Ala Glu Lys Pro Glu Pro Thr Asn Gln Gly Gln Asp Ser Leu Lys Lys
50 55 60

His Leu His Ala Glu Ile Lys Val Ile Gly Thr Ile Gln Ile Leu Cys
65 70 75 80

Gly Met Met Val Leu Ser Leu Gly Ile Ile Leu Ala Ser Ala Ser Phe
85 90 95

Ser Pro Asn Phe Thr Gln Val Thr Ser Thr Leu Leu Asn Ser Ala Tyr
100 105 110

Pro Phe Ile Gly Pro Phe Phe Phe Ile Ile Ser Gly Ser Leu Ser Ile
115 120 125

Ala Thr Glu Lys Arg Leu Thr Lys Leu Leu Val His Ser Ser Leu Val

130 135 140

Gly Ser Ile Leu Ser Ala Leu Ser Ala Leu Val Gly Phe Ile Ile Leu
145 150 155 160

Ser Val Lys Gln Ala Thr Leu Asn Pro Ala Ser Leu Gln Cys Glu Leu
165 170 175

Asp Lys Asn Asn Ile Pro Thr Arg Ser Tyr Val Ser Tyr Phe Tyr His
180 185 190

Asp Ser Leu Tyr Thr Thr Asp Cys Tyr Thr Ala Lys Ala Ser Leu Ala
195 200 205

Gly Xaa Leu Ser Leu Met Leu Ile Cys Thr Leu Leu Glu Phe Cys Leu
210 215 220

Ala Val Leu Thr Ala Val Leu Arg Trp Lys Gln Ala Tyr Ser Asp Phe
225 230 235 240

Pro Gly Ser Val Leu Phe Leu Pro His Ser Tyr Ile Gly Asn Ser Gly
245 250 255

Met Ser Ser Lys Met Thr His Asp Cys Gly Tyr Glu Glu Leu Leu Thr
260 265 270

Ser

<210> 354
<211> 192
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (129)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 354
Met Met Val Leu Ser Leu Gly Ile Ile Leu Ala Ser Ala Ser Phe Ser
1 5 10 15

Pro Asn Phe Thr Gln Val Thr Ser Thr Leu Leu Asn Ser Ala Tyr Pro
20 25 30

Phe Ile Gly Pro Phe Phe Phe Ile Ile Ser Gly Ser Leu Ser Ile Ala
35 40 45

Thr Glu Lys Arg Leu Thr Lys Leu Leu Val His Ser Ser Leu Val Gly
50 55 60

Ser Ile Leu Ser Ala Leu Ser Ala Leu Val Gly Phe Ile Ile Leu Ser
65 70 75 80

Val Lys Gln Ala Thr Leu Asn Pro Ala Ser Leu Gln Cys Glu Leu Asp
85 90 95

Lys Asn Asn Ile Pro Thr Arg Ser Tyr Val Ser Tyr Phe Tyr His Asp
100 105 110

Ser Leu Tyr Thr Thr Asp Cys Tyr Thr Ala Lys Ala Ser Leu Ala Gly
115 120 125

Xaa Leu Ser Leu Met Leu Ile Cys Thr Leu Leu Glu Phe Cys Leu Ala
130 135 140

Val Leu Thr Ala Val Leu Arg Trp Lys Gln Ala Tyr Ser Asp Phe Pro
145 150 155 160

Gly Ser Val Leu Phe Leu Pro His Ser Tyr Ile Gly Asn Ser Gly Met
165 170 175

Ser Ser Lys Met Thr His Asp Cys Gly Tyr Glu Glu Leu Leu Thr Ser
180 185 190

<210> 355
<211> 204
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (119)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 355
Gly Ala Ser Cys Glu Gly Gly Gly Ala Ala Ala Arg Ala Ala Leu Gly
1 5 10 15

Val His Arg Ser Gln Lys Ala Leu Leu Val Phe Arg Arg Thr Leu Ser
20 25 30

Asn Leu Leu Tyr Met Pro Leu Leu Arg Gly Leu Leu Trp Leu Gln Val
35 40 45

Leu Cys Ala Gly Pro Leu His Thr Glu Ala Val Val Leu Leu Val Pro
50 55 60

Ser Asp Asp Gly Arg Ala Phe Leu Leu Arg Ser Arg Leu Leu His Pro
65 70 75 80

Glu Ala His Val Pro Pro Ala Ala Asp Arg Gly Ala Ser Leu Gln Cys
85 90 95

Val Leu His Gln Ala Ala Pro Lys Ser Arg Pro Arg Ser Pro Ala Ala
100 105 110

Gly Ala Ala Leu Leu His Xaa Pro Arg Arg Thr Gly Asp Glu Pro Cys
115 120 125

Arg Glu Phe His Gly Asn Gly Phe Pro Gly Pro Thr Gln Leu Thr Pro
130 135 140

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Gly Glu Cys Gly Leu Pro Ala Pro Ser Ser Leu Leu Gln His Ala Ser
145                 150                 155                 160

Ala Pro Val Arg Thr Gly Ser Glu Gly Gln Val Val Gly Cys Pro Arg
                165                 170                 175

Ala Arg Gly Glu Thr Gly Glu Gly Leu Ser Leu Ala Phe Leu Ser Ser
            180                 185                 190

Leu Met Phe Thr Ser Arg Asn Gly Leu Val Gly Cys
        195                 200


<210> 356
<211> 72
<212> PRT
<213> Homo sapiens

<400> 356
Met Gly Ser Ala Ala Leu Glu Ile Leu Gly Leu Val Leu Cys Leu Val
  1               5                  10                  15

Gly Trp Gly Gly Leu Ile Leu Ala Cys Gly Leu Pro Met Trp Gln Val
             20                  25                  30

Thr Ala Phe Leu Asp His Asn Ile Val Thr Ala Gln Thr Thr Trp Lys
        35                  40                  45

Gly Leu Trp Met Ser Cys Val Val Gln Ser Thr Gly Thr Cys Ser Ala
    50                  55                  60

Lys Cys Thr Thr Arg Cys Trp Leu
 65                  70


<210> 357
<211> 115
<212> PRT
<213> Homo sapiens

<400> 357
Leu Lys Arg Ala Pro Pro Gly Pro Ala Leu Ala Lys Gly Leu Leu Gln
  1               5                  10                  15

Pro Ser Ser Thr Phe Gln Ala Leu Glu Thr Asn Ile Gly Asp Gln Val
             20                  25                  30

Arg Arg His Ser Thr Ala Val Val Ile Arg Glu Met Thr Ser Tyr Ile
        35                  40                  45

Leu Ile Ser Phe Val Leu Leu Ile Gly Val Gly Cys Ile Glu Lys Asp
    50                  55                  60

Gln Ser Cys Pro Val Phe Gly Gly Arg Lys Arg Leu His Leu Leu Phe
 65                  70                  75                  80

Val Gly Gly Gln Leu Arg Gln Val Arg Met Leu Arg Gly Glu Leu Ser
                 85                  90                  95
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Cys Ala Cys Tyr Arg Pro His Val Gln Ala Leu Gln Leu Gly Gly Cys
            100                 105                 110

Thr Cys Phe
        115


<210> 358
<211> 88
<212> PRT
<213> Homo sapiens

<400> 358
Val Ile Lys Leu Ile Cys Pro Ala Ala Phe Pro Val Tyr Phe Gln Asp
  1               5                  10                  15

Met Ala Arg Gly Cys Val Cys Ser Leu Cys Ala Ser Val Cys Ile Phe
             20                  25                  30

Leu Ser Ser Leu Phe Pro Leu Leu Pro Ser Val His Ser Val Asn Ile
         35                  40                  45

Ile Ser Cys Leu Leu Leu Ser Lys Cys Phe Glu Gly Leu Glu Leu Met
     50                  55                  60

Cys Glu His Leu Tyr Gln Leu Ser Gln Leu His Val Leu His His Ile
 65                  70                  75                  80

Phe Ser Tyr Leu Leu Cys Thr Pro
                 85


<210> 359
<211> 716
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (2)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (373)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (705)
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 359
Tyr Xaa Ile Pro Gly Ser Thr His Ala Ser Gly Arg Gln Arg Gly Ser
  1               5                  10                  15

Gly Arg Gly Glu Asp Asp Ser Gly Pro Pro Pro Ser Thr Val Ile Asn
             20                  25                  30
```

Gln Asn Glu Thr Phe Ala Asn Ile Ile Phe Lys Pro Thr Val Val Gln
35 40 45

Gln Ala Arg Ile Ala Gln Asn Gly Ile Leu Gly Asp Phe Ile Ile Arg
50 55 60

Tyr Asp Val Asn Arg Glu Gln Ser Ile Gly Asp Ile Gln Val Leu Asn
65 70 75 80

Gly Tyr Phe Val His Tyr Phe Ala Pro Lys Asp Leu Pro Pro Leu Pro
85 90 95

Lys Asn Val Val Phe Val Leu Asp Ser Ser Ala Ser Met Val Gly Thr
100 105 110

Lys Leu Arg Gln Thr Lys Asp Ala Leu Phe Thr Ile Leu His Asp Leu
115 120 125

Arg Pro Gln Asp Arg Phe Ser Ile Ile Gly Phe Ser Asn Arg Ile Lys
130 135 140

Val Trp Lys Asp His Leu Ile Ser Val Thr Pro Asp Ser Ile Arg Asp
145 150 155 160

Gly Lys Val Tyr Ile His His Met Ser Pro Thr Gly Gly Thr Asp Ile
165 170 175

Asn Gly Val Leu Gln Arg Ala Ile Arg Leu Leu Asn Lys Tyr Val Ala
180 185 190

His Ser Gly Ile Gly Asp Arg Ser Val Ser Leu Ile Val Phe Leu Thr
195 200 205

Asp Gly Lys Pro Thr Val Gly Glu Thr His Thr Leu Lys Ile Leu Asn
210 215 220

Asn Thr Arg Glu Ala Ala Arg Gly Gln Val Cys Ile Phe Thr Ile Gly
225 230 235 240

Ile Gly Asn Asp Val Asp Phe Arg Leu Leu Glu Lys Leu Ser Leu Glu
245 250 255

Asn Cys Gly Leu Thr Arg Arg Val His Glu Glu Glu Asp Ala Gly Ser
260 265 270

Gln Leu Ile Gly Phe Tyr Asp Glu Ile Arg Thr Pro Leu Leu Ser Asp
275 280 285

Ile Arg Ile Asp Tyr Pro Pro Ser Ser Val Val Gln Ala Thr Lys Thr
290 295 300

Leu Phe Pro Asn Tyr Phe Asn Gly Ser Glu Ile Ile Ile Ala Gly Lys
305 310 315 320

Leu Val Asp Arg Lys Leu Asp His Leu His Val Glu Val Thr Ala Ser
325 330 335

Asn Ser Lys Lys Phe Ile Ile Leu Lys Thr Asp Val Pro Val Arg Pro

340 345 350

Gln Lys Ala Gly Lys Asp Val Thr Gly Ser Pro Arg Pro Gly Gly Asp
355 360 365

Gly Glu Gly Asp Xaa Asn His Ile Glu Arg Leu Trp Ser Tyr Leu Thr
370 375 380

Thr Lys Glu Leu Leu Ser Ser Trp Leu Gln Ser Asp Asp Glu Pro Glu
385 390 395 400

Lys Glu Arg Leu Arg Gln Arg Ala Gln Ala Leu Ala Val Ser Tyr Arg
405 410 415

Phe Leu Thr Pro Phe Thr Ser Met Lys Leu Arg Gly Pro Val Pro Arg
420 425 430

Met Asp Gly Leu Glu Glu Ala His Gly Met Ser Ala Ala Met Gly Pro
435 440 445

Glu Pro Val Val Gln Ser Val Arg Gly Ala Gly Thr Gln Pro Gly Pro
450 455 460

Leu Leu Lys Lys Pro Tyr Gln Pro Arg Ile Lys Ile Ser Lys Thr Ser
465 470 475 480

Val Asp Gly Asp Pro His Phe Val Val Asp Phe Pro Leu Ser Arg Leu
485 490 495

Thr Val Cys Phe Asn Ile Asp Gly Gln Pro Gly Asp Ile Leu Arg Leu
500 505 510

Val Ser Asp His Arg Asp Ser Gly Val Thr Val Asn Gly Glu Leu Ile
515 520 525

Gly Ala Pro Ala Pro Pro Asn Gly His Lys Lys Gln Arg Thr Tyr Leu
530 535 540

Arg Thr Ile Thr Ile Leu Ile Asn Lys Pro Glu Arg Ser Tyr Leu Glu
545 550 555 560

Ile Thr Pro Ser Arg Val Ile Leu Asp Gly Gly Asp Arg Leu Val Leu
565 570 575

Pro Cys Asn Gln Ser Val Val Val Gly Ser Trp Gly Leu Glu Val Ser
580 585 590

Val Ser Ala Asn Ala Asn Val Thr Val Thr Ile Gln Gly Ser Ile Ala
595 600 605

Phe Val Ile Leu Ile His Leu Tyr Lys Lys Pro Ala Pro Phe Gln Arg
610 615 620

His His Leu Gly Phe Tyr Ile Ala Asn Ser Glu Gly Leu Ser Ser Asn
625 630 635 640

Cys His Gly Leu Leu Gly Gln Phe Leu Asn Gln Asp Ala Arg Leu Thr
645 650 655

Glu Asp Pro Ala Gly Pro Ser Gln Asn Leu Thr His Pro Leu Leu Leu
660 665 670

Gln Val Gly Glu Gly Pro Glu Ala Val Leu Thr Val Lys Gly His Gln
675 680 685

Val Pro Val Val Trp Lys Gln Arg Lys Ile Tyr Asn Gly Glu Glu Gln
690 695 700

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<210> 360
<211> 387
<212> PRT
<213> Homo sapiens

<400> 360
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Ala Leu Pro Gln Val Val Ala Val Asp Ile Asn Asp Leu Gly Thr Ile
35 40 45

Lys Leu Ser Leu Glu Val Thr Trp Ser Pro Phe Asp Lys Asp Asp Gln
50 55 60

Pro Ser Ala Ala Ser Ser Val Asn Lys Ala Ser Thr Val Thr Lys Arg
65 70 75 80

Phe Ser Thr Tyr Ser Gln Ser Pro Pro Asp Thr Pro Ser Leu Arg Glu
85 90 95

Gln Ala Phe Tyr Asn Met Leu Arg Arg Gln Glu Glu Leu Glu Asn Gly
100 105 110

Thr Ala Trp Ser Leu Ser Ser Glu Ser Ser Asp Asp Ser Ser Ser Pro
115 120 125

Gln Leu Ser Gly Thr Ala Arg His Ser Pro Ala Pro Arg Pro Leu Val
130 135 140

Gln Gln Pro Glu Pro Leu Pro Ile Gln Val Ala Phe Arg Arg Pro Glu
145 150 155 160

Thr Pro Ser Ser Gly Pro Leu Asp Glu Glu Gly Ala Val Ala Pro Val
165 170 175

Leu Ala Asn Gly His Ala Pro Tyr Ser Arg Thr Leu Ser His Ile Ser
180 185 190

Glu Ala Ser Val Asn Ala Ala Leu Ala Glu Ala Ser Val Glu Ala Val
195 200 205

Gly Pro Lys Ser Leu Ser Trp Gly Pro Ser Pro Pro Thr His Pro Ala

210 215 220

Pro Thr His Gly Lys His Pro Ser Pro Val Pro Pro Ala Leu Asp Pro
225 230 235 240

Gly His Ser Ala Thr Ser Ser Thr Leu Gly Thr Thr Gly Ser Val Pro
245 250 255

Thr Ser Thr Asp Pro Ala Pro Ser Ala His Leu Asp Ser Val His Lys
260 265 270

Ser Thr Asp Ser Gly Pro Ser Glu Leu Pro Gly Pro Thr His Thr Thr
275 280 285

Thr Gly Ser Thr Tyr Ser Ala Ile Thr Thr Thr His Ser Ala Pro Ser
290 295 300

Pro Leu Thr His Thr Thr Thr Gly Ser Thr His Lys Pro Ile Ile Ser
305 310 315 320

Thr Leu Thr Thr Thr Gly Pro Thr Leu Asn Ile Ile Gly Pro Val Gln
325 330 335

Thr Thr Thr Ser Pro Thr His Thr Met Pro Ser Pro Ser Ser His Ser
340 345 350

Asn Ser Pro Gln Tyr Val Asp Phe Cys Ser Ser Val Cys Asp Asn Ile
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Phe Val His Tyr Val Ile Gly Ile Phe Phe His Thr Leu Tyr Ser Ser
370 375 380

Lys Thr Leu
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<210> 361
<211> 260
<212> PRT
<213> Homo sapiens

<400> 361
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His Val Val Val Gly Ser Val Ser Cys Glu Thr Lys Asp Leu Phe Ala
20 25 30

Ala Leu Pro Gln Val Val Ala Val Asp Ile Asn Asp Leu Gly Thr Ile
35 40 45

Lys Leu Ser Leu Glu Val Thr Trp Ser Pro Phe Asp Lys Asp Asp Gln
50 55 60

Pro Ser Ala Ala Ser Ser Val Asn Lys Ala Ser Thr Val Thr Lys Arg
65 70 75 80

Phe Ser Thr Tyr Ser Gln Ser Pro Pro Asp Thr Pro Ser Leu Arg Glu
85 90 95

Gln Ala Phe Tyr Asn Met Leu Arg Arg Gln Glu Glu Leu Glu Asn Gly
100 105 110

Thr Ala Trp Ser Leu Ser Ser Glu Ser Ser Asp Asp Ser Ser Ser Pro
115 120 125

Gln Leu Ser Gly Thr Ala Arg His Ser Pro Ala Pro Arg Pro Leu Val
130 135 140

Gln Gln Pro Glu Pro Leu Pro Ile Gln Val Ala Phe Arg Arg Pro Glu
145 150 155 160

Thr Pro Ser Ser Gly Pro Leu Asp Glu Glu Gly Ala Val Ala Pro Val
165 170 175

Leu Ala Asn Gly His Ala Pro Tyr Ser Arg Thr Leu Ser His Ile Ser
180 185 190

Glu Ala Ser Val Asn Ala Ala Leu Ala Glu Ala Ser Val Glu Ala Val
195 200 205

Gly Pro Lys Ser Leu Ser Trp Gly Pro Ser Pro Pro Thr His Pro Ala
210 215 220

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Gly His Ser Ala Thr Ser Ser Thr Leu Gly Thr Thr Gly Ser Val Pro
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Thr Ser Thr Asp
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<210> 362
<211> 155
<212> PRT
<213> Homo sapiens

<400> 362
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Ile Phe Leu Ser Val Tyr Phe Ile Ile Thr Leu Ser Asp Leu Glu Cys
35 40 45

Asp Tyr Ile Asn Ala Arg Ser Cys Cys Ser Lys Leu Asn Lys Trp Val
50 55 60

Ile Pro Glu Leu Ile Gly His Thr Ile Val Thr Val Leu Leu Leu Met
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Ser Leu His Trp Phe Ile Phe Leu Leu Asn Leu Pro Val Ala Thr Trp
85 90 95

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Asp Pro Thr Glu Ile His Asn Arg Gly Gln Leu Lys Ser His Met Lys
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<210> 363
<211> 70
<212> PRT
<213> Homo sapiens

<400> 363
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Ser Gly Ser Ser Leu Pro Ser Ala Leu Ala Leu Ser Leu Leu Leu Val
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<210> 364
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<212> PRT
<213> Homo sapiens

<400> 364
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Ala Val Pro Leu Phe Leu Tyr Ile Phe Thr Leu Leu Pro Leu Leu Pro
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Phe Leu Leu Ser Leu Cys Phe Ser Pro Leu Thr Val Lys Arg Ser Ser
        35                  40                  45

Ser Ser Glu Ser Lys Ser Ser Leu
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PCT/US99/17130

Applicant's or agent's file reference number	PZ031PCT	International application	Unassigned

INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13*bis*)

REC'D 18 AUG 1999
WIPO PCT

A. The indications made below relate to the microorganism referred to in the description on page 260, line N/A

B. IDENTIFICATION OF DEPOSIT Further deposits are identified on an additional sheet ☐

Name of depositary institution American Type Culture Collection

Address of depositary institution *(including postal code and country)*

10801 University Boulevard
Manassas, Virginia 20110-2209
United States of America

Date of deposit	Accession Number
July 27, 1998	203069

C. ADDITIONAL INDICATIONS *(leave blank if not applicable)* This information is continued on an additional sheet ☐

D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE *(if the indications are not for all designated States)*

Europe
In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28(4) EPC).

E. SEPARATE FURNISHING OF INDICATIONS *(leave blank if not applicable)*

The indications listed below will be submitted to the International Bureau later *(specify the general nature of the indications e.g., "Accession Number of Deposit")*

For receiving Office use only	For International Bureau use only
☒ This sheet was received with the international application	☒ This sheet was received by the International Bureau on: 18 AUGUST 1999
Authorized officer Yvette Simms PCT International Division	Authorized officer

Form PCT/RO/134 (July 1992)

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later that at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

PCT/US99/17130

Applicant's or agent's file reference number	PZ031PCT	International application	Unassigned

INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13*bis*)

A. The indications made below relate to the microorganism referred to in the description on page 243, line N/A.

B. IDENTIFICATION OF DEPOSIT — Further deposits are identified on an additional sheet ☐

Name of depositary institution American Type Culture Collection

Address of depositary institution *(including postal code and country)*

10801 University Boulevard
Manassas, Virginia 20110-2209
United States of America

Date of deposit	Accession Number
June 11, 1998	209965

C. ADDITIONAL INDICATIONS *(leave blank if not applicable)* — This information is continued on an additional sheet ☐

D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE *(if the indications are not for all designated States)*

Europe
In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28(4) EPC).

E. SEPARATE FURNISHING OF INDICATIONS *(leave blank if not applicable)*

The indications listed below will be submitted to the International Bureau later *(specify the general nature of the indications e.g., "Accession Number of Deposit")*

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☒ This sheet was received with the international application	☐ This sheet was received by the International Bureau on:
Authorized officer Yvette Simms PCT International Division	Authorized officer

Form PCT/RO/134 (July 1992)

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later that at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

Applicant's or agent's file reference number	PZ031PCT	International application	Unassigned

INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13*bis*)

A. The indications made below relate to the microorganism referred to in the description on page 249, line N/A

B. IDENTIFICATION OF DEPOSIT — Further deposits are identified on an additional sheet ☐

Name of depositary institution: American Type Culture Collection

Address of depositary institution *(including postal code and country)*

10801 University Boulevard
Manassas, Virginia 20110-2209
United States of America

Date of deposit	Accession Number
June 26, 1998	203027

C. ADDITIONAL INDICATIONS *(leave blank if not applicable)* — This information is continued on an additional sheet ☐

D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE *(if the indications are not for all designated States)*

Europe
In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28(4) EPC).

E. SEPARATE FURNISHING OF INDICATIONS *(leave blank if not applicable)*

The indications listed below will be submitted to the International Bureau later *(specify the general nature of the indications e.g., "Accession Number of Deposit")*

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☒ This sheet was received with the international application	☐ This sheet was received by the International Bureau on:
Authorized officer: Yvette E. Simms, PCT International Division	Authorized officer

Form PCT/RO/134 (July 1992)

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later that at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

Applicant's or agent's file reference number	PZ031PCT	International application	Unassigned

INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13*bis*)

A. The indications made below relate to the microorganism referred to in the description on page 253, line N/A

B. IDENTIFICATION OF DEPOSIT — Further deposits are identified on an additional sheet ☐

Name of depositary institution American Type Culture Collection

Address of depositary institution *(including postal code and country)*

10801 University Boulevard
Manassas, Virginia 20110-2209
United States of America

Date of deposit	Accession Number
July 27, 1998	203071

C. ADDITIONAL INDICATIONS *(leave blank if not applicable)* — This information is continued on an additional sheet ☐

D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE *(if the indications are not for all designated States)*

Europe
In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28(4) EPC).

E. SEPARATE FURNISHING OF INDICATIONS *(leave blank if not applicable)*

The indications listed below will be submitted to the International Bureau later *(specify the general nature of the indications e.g., "Accession Number of Deposit")*

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Authorized officer Yvette E. Simms, PCT International Division	Authorized officer

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later that at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

Applicant's or agent's file reference number	PZ031PCT	International application

INDICATIONS RELATING TO A DEPOSITED MICROORGANISM

(PCT Rule 13*bis*)

A. The indications made below relate to the microorganism referred to in the description on page 259, line N/A.

B. IDENTIFICATION OF DEPOSIT — Further deposits are identified on an additional sheet ☐

Name of depositary institution: American Type Culture Collection

Address of depositary institution *(including postal code and country)*

10801 University Boulevard
Manassas, Virginia 20110-2209
United States of America

Date of deposit	Accession Number
July 27, 1998	203070

C. ADDITIONAL INDICATIONS *(leave blank if not applicable)* — This information is continued on an additional sheet ☐

D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE *(if the indications are not for all designated States)*

Europe
In respect to those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28(4) EPC).

E. SEPARATE FURNISHING OF INDICATIONS *(leave blank if not applicable)*

The indications listed below will be submitted to the International Bureau later *(specify the general nature of the indications e.g., "Accession Number of Deposit")*

For receiving Office use only	For International Bureau use only
☒ This sheet was received with the international application	☐ This sheet was received by the International Bureau on:
Authorized officer Yvette E. Simms PCT International Division	Authorized officer

CANADA

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

NORWAY

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

AUSTRALIA

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

FINLAND

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

UNITED KINGDOM

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

DENMARK

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later that at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

SWEDEN

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

NETHERLANDS

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/17130

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :Please See Extra Sheet.
US CL :Please See Extra Sheet.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 536/23.1, 23.5; 435/69.1, 320.1, 252.3, 325, 6, 7.1; 530/350, 300, 387.1; 514/2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, DIALOG - Biotech Files

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JACOBS, K. A. et al. A Genetic Selection For Isolating cDNAs Encoding Secreted Proteins. Gene. 1997, Vol. 198, pages 289-296, see entire document.	1-23

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
05 OCTOBER 1999	21 OCT 1999

Name and mailing address of the ISA/US	Authorized officer
Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	ELIZABETH C. KEMMERER
Facsimile No. (703) 305-3230	Telephone No. (703) 308-0196

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/17130

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 1-23
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

Please See Extra Sheet.

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/17130

A. CLASSIFICATION OF SUBJECT MATTER:
IPC (6):

C12N 1/21, 5/10, 15/11, 15/12, 15/63; A61K 38/16, 38/17; C07K 14/00, 14/435, 16/00; G01N 33/50

A. CLASSIFICATION OF SUBJECT MATTER:
US CL :

536/23.1, 23.5; 435/69.1, 320.1, 252.3, 325, 6, 7.1; 530/350, 300, 387.1; 514/2

BOX I. OBSERVATIONS WHERE CLAIMS WERE FOUND UNSEARCHABLE
2. Where no meaningful search could be carried out, specifically:

All of the claims were unsearchable to the extent that they require reference to sequences from the sequence listing or an ATCC deposit. However, the specific sequence and deposit numbers were replaced in the claims with generic designators X, Y and Z. Therefore, no meaningful search of the sequences or deposits per se can be carried out by this Authority. The subject matter of the claims has been searched only to the extent possible with reference to the balance of the description.